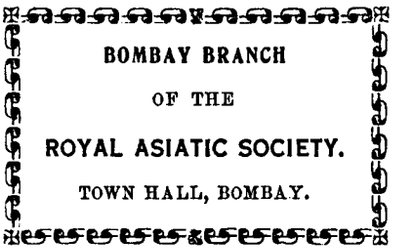
Land Records &
Agriculture, Assam,
report,
1897-98 to 1905-06



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ANNUAL REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR

1897-98. to 1905-06

126

BY

F. C. HENNIKER, Esq., I.C.S.,
OFFICIATING DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.

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FROM

F. C. HENNIKER, Esq., I.C.S.,

Offg. Director, Department of Land Records and Agriculture, Assam,

To

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 12th July 1898.

SIR,

I HAVE the honour to submit the Fifteenth Annual Report giving an account of the operations of this Department for the year ending the 31st March 1898. The delay in its submission is due to the late receipt, from certain Deputy Commissioners, of information without which it would have been incomplete.

I have the honour to be,

SIR,

Your most obedient Servant,

F. C. HENNIKER,

Offg. Director, Department of Land Records and Agriculture, Assam.

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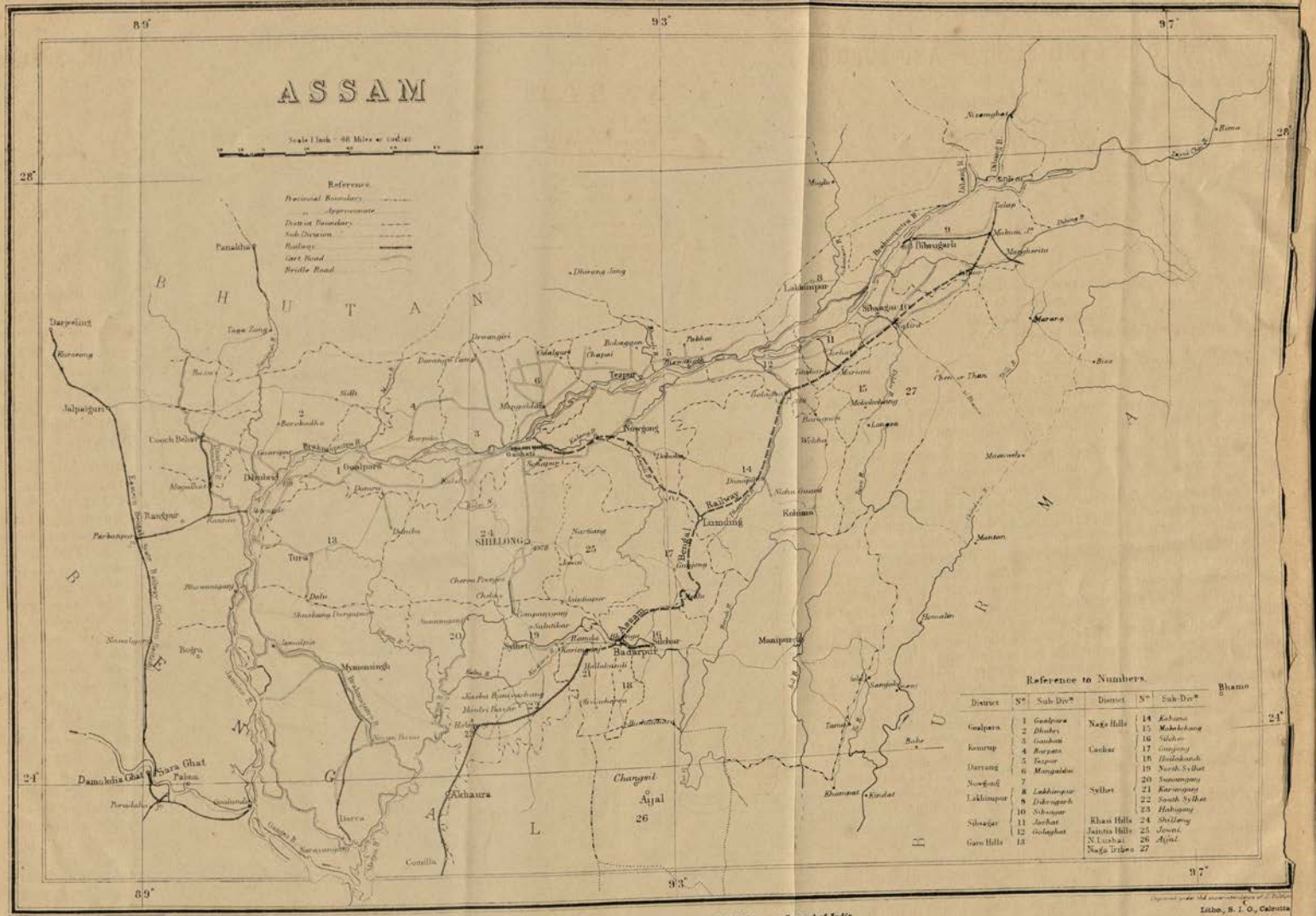

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ANNUAL REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR

1897-98.

CHAPTER I.

PREFATORY.

Introductory.

1. As in last year, this report is drawn up in accordance with the instructions contained in the eighth of the series of Resolutions issued by the Government of India in the Department of Revenue and Agriculture on the 20th of March 1897.*

Charge.

2. Mr. F. J. Monahan, I.C.S., was in charge of the Department throughout the year. Mr. Bhupal Chandra Basu, B.A., M.R.A.C., M.R.A.S. (Eng.), was appointed Assistant to the Director of this Department by Assam Secretariat Notification No. 6431G., dated the 15th September 1897, and joined his appointment on the forenoon of the 25th September 1897.

Tours.

3. Mr. Monahan left Shillong for his rainy-season tour on the 26th July 1897, and, after inspecting the traffic registration offices at Dhubri and Bhairab Bazar, visited Maulvi Bazar, where he inspected the *Ilám* Settlement office, and then proceeded to Karimganj, where he inspected the office work of the Pratabgarh patwaris, and made some enquiries with reference to the arrangements for the forthcoming resettlement of the Pratabgarh parganas. Between the 16th and the 24th August, Mr. Monahan inspected the Cachar Settlement office at Silchar, and conferred with the Settlement Officer on the subject of his proposals for classification and assessment. He then went down the Surma river by boat to Sylhet, making enquiries on the way as to the effects of the earthquake on cultivation in the Jaintia parganas. At Sylhet, he inspected the Jaintia registrar kanungo's office and the office work of the Jaintia parganas, and then returned *viâ* Cherrapunji to Shillong, where he arrived on the 4th September 1897. In the early part of November, Mr. Monahan was occupied, with Mr. Basu, Assistant to the Director, in drafting preliminary forms for the mauza-book to be introduced in the Assam Valley as a continuous record of agricultural statistics. On the 12th November, he started on tour with Mr. Basu for the purpose of commencing the introduction of the book in the Sibsagar district. At Gauhati, the survey school was inspected by Mr. Basu, and the registrar kanungo's office, as well as the maps and papers of some of the supervisor kanungos and mandals, by Mr. Monahan. They both then proceeded to Sibsagar, where instruction was given to the Sub-Deputy Collector, supervisor kanungos, and mandals of the sadr subdivision in the method of filling up the forms of the mauza-book. Mr. Monahan and Mr. Basu subsequently made a tour together through the sadr and Jorhat subdivisions of the Sibsagar district, inspecting the work of the Land Records staff, explaining the new system of recording agricultural statistics, and making personally, in selected villages, preliminary classification of lands, which is one of its features. Mr. Monahan left Mr. Basu at Jorhat on the 16th December 1897, and then made a short tour in the Lakhimpur district, inspecting the registrar kanungos' offices and the work of the Land Records staff of its two subdivisions. At the beginning of January 1898, he visited Tezpur, where he inspected the land records of the sadr subdivision of Darrang, and then made a tour in the Nowgong district, where he inspected land records work, and also the progress of the enquiry with regard to the effects of the earthquake. After a short visit to Shillong at the end of January,

* Proceedings of the Government of India in the Department of Revenue and Agriculture (No. 3—39-1, dated Calcutta, the 20th March 1897).

he made similar inspections in the Barpeta subdivision of the Kamrup district, and then made a second tour in the Surma Valley, where he inspected the *ilám* survey as well as the progress of the assessment enquiries in Pratabgarh, and the work of the Land Records staff in the Jaintia parganas, and conferred with the Settlement Officer of Cachar at Silchar. He returned to Shillong *viâ* Jaintiapur and Jowai on the 16th March. Mr. Basu continued his tour in the Sibsagar district up to the end of January, when he was required to go to Calcutta to give evidence before the Famine Commission. He then visited Shillong for the purpose of supervising operations at the Experimental Farm in Upper Shillong, and on the 8th March returned to the Sibsagar district, where he remained on tour till the end of the year. A full account of the progress made by him in introducing the mauza-book in that district will be found in Chapter III of this Report. In all, Mr. Monahan was on tour for 160 days during the year. Out of 188 days for which Mr. Basu held charge of the office of the Assistant to the Director of Land Records and Agriculture, he was on tour for 115 days, inclusive of 22 days spent in connection with his deputation to Calcutta, but exclusive of 14 days spent in going to, and coming back from, Upper Shillong Experimental Farm.

CHAPTER II.

LAND RECORDS ESTABLISHMENTS.

Supervisor kanungos.

4. The following statement shows the number of supervisor kanungos entertained in each grade, in each district, at the close of the year under report and at the close of the preceding year, and compares the number actually entertained with the sanctioned scale for the province:

Name of district.	Number of supervisor kanungos actually entertained on the 1st April 1897.			Number of supervisor kanungos actually entertained on the 1st April 1898.			Increase or decrease during the year.		
	First grade.	Second grade.	Total.	First grade.	Second grade.	Total.	First grade.	Second grade.	Total.
1	2	3	4	5	6	7	8	9	10
Cachar	1	5	6	2	4	6	+ 1	− 1	...
Sylhet	...	4	4	...	4	4	...	...	...
Goalpara	...	1	1	...	1	1	...	...	...
Kamrup	4	10	14	6	8	14	+ 2	− 2	...
Darrang	5	1	6	5	1	6	...	...	...
Nowgong	4	4	8	4	4	8	...	...	...
Sibsagar	1	8	9	3	6	9	+ 2	− 2	...
Lakhimpur	3	...	3	2	1	3	− 1	+ 1	...
Total for the Province ...	18	33	51	22	29	51	+ 4	− 4	...
Sanctioned scale for the Province	32	19	51	33	20	53	+ 1	+ 1	2

The entertainment of two kanungos, one in the first and one in the second grade, to supervise the work of the patwaris appointed in the portion of the Cachar district surveyed in 1895-96, was sanctioned by letter No. 61Rev.—674R., dated the 15th February 1898, from the Secretary to the Chief Commissioner. Both these appointments have been given to men who have served with credit as munsarims on the Settlement staff. They were appointed, in the first instance, in the second grade. Though the appointments were sanctioned during the year under report, the entertainment of the kanungos did not take place till the close of the year, and hence the discrepancy between the sanctioned scale and the number actually entertained on the 1st April 1898.

5. The average area of supervisor kanungos' circles in the Assam Valley, in Sylhet (Jaintia), and in Cachar is shown below :

Circles of supervisor kanungos.

Class of officer.	Settled area, in *bighas*.						Unsettled waste, in *bighas*.			Total, in *bighas*.		
	Ordinary tenures.			Grants, permanently-settled, *lakhiraj*, or *nisf-khiraj* estates.								
	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.
1	2	3	4	5	6	7	8	9	10	11	12	13
Supervisor kanungos ...	102,885	150,475	71,487	36,113	13,029	61,145	157,107	70,877	47,900	296,105	234,381	180,532

6. The following table shows the number and grading of mandals and patwaris in each district as they stood on the 1st April 1898, and compares the figures with those of the previous year and the sanctioned scale :

Grading and pay of mandals and patwaris; areas of their circles.

Name of district.	Sanctioned scale.				Number entertained on the 1st April 1897.				Number entertained on the 1st April 1898.				Increase or decrease during the year.			
	First grade.	Second grade.	Third grade.	Total.	First grade.	Second grade.	Third grade.	Total.	First grade.	Second grade.	Third grade.	Total.	First grade.	Second grade.	Third grade.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Cachar	19	30	48	97	...	...	60	60	3	17	40	60	+ 3	+17	−20	...
Sylhet (Pratabgarh)	...	1	3	4	...	1	3	4	...	1	3	4	...	...	...	...
„ (Jaintia)	10	15	27	52	...	...	52	52	4	15	33	52	+ 4	+15	−19	...
„ (*Ilám*)	...	...	2	2	...	...	...	...	...	...	2	2	...	...	+ 2	+ 2
Goalpara	7	10	18	35	3	9	20	32	3	10	20	33	...	+ 1	...	+ 1
Kamrup	59	88	149	296	32	135	148	295*	39	95	161	295*	+ 7	−20	+13	...
Darrang	28	42	70	140	24	55	60	139	22	45	72	139	− 2	−10	+12	...
Nowgong	33	50	85	168	24	45	97	166	24	41	101	166	...	− 4	+ 4	...
Sibsagar	40	62	103	205	29	72	102	203	31	68	104	203	+ 2	− 4	+ 2	...
Lakhimpur	21	32	55	108	6	38	63	107	7	35	66	108	+ 1	− 3	+ 3	+ 1
Total	217	330	560	1,107	118	335	605	1,058	133	327	602	1,062	+15	− 8	− 3	+ 4

* Exclusive of the 5 mandals of Beltola paid by the mauzadar.

The entertainment of a staff of 36 patwaris, *viz.*, 7 of the first, 11 of the second, and 18 of the third grade, to keep up to date the maps and settlement records of the area surveyed in the Cachar district in the season 1895-96 was sanctioned in letter No. 61Rev.—674R., dated the 15th February 1898, from the Secretary to the Chief Commissioner. Of these posts, 2 in the first grade and 9 in the second grade have been given to men who have done satisfactory work with the Survey and Settlement parties, and the remaining 25 to candidates who passed through the training classes conducted by the officers of the Survey party and received certificates of competence. These latter have all been appointed, in the first instance, in the third grade, and will receive promotion in due course. These appointments, though sanctioned during the year under report, were not made till the close of the year, and the large difference between the sanctioned number of mandals and patwaris and the number actually entertained on the 1st April 1898 is due mainly to this cause. The appointment of two patwaris of the third grade to keep up to date the maps of that portion of the Hákáluki tahsil of the Sylhet district which was surveyed cadastrally during the year 1896-97 was sanctioned by letter No. 74P.S.—875G., dated the 31st January 1898, from the Secretary to the Chief Commissioner. These posts have now been filled up only temporarily ; permanent appointments will be made when the staff of patwaris

required for the whole of the *ilâm* and other temporarily-settled estates and unsettled lands now under survey in that district are appointed. Twenty-one promotions of mandals to the first grade were sanctioned during the year, but the number entertained in that grade at the end of the year was only 15 more than at the end of the preceding year, owing to vacancies caused by deaths, promotions to supervisor kanungoships, etc. Eight promotions to this grade have been sanctioned since the close of the year.

The rules for the distribution of mandals' and patwaris' salary referred to in paragraph 6 of the last year's report were approved by the Chief Commissioner, and have issued to the districts with this office Circular No. 3, dated the 4th November 1897 ; the pay of mandals and patwaris is now drawn according to the procedure laid down in these rules.

The statement below shows the average areas of mandals' and patwaris' circles in the Assam Valley, in Sylhet (Jaintia), and in Cachar :

Class of officer.	Settled area, in *bighas*.						Unsettled waste, in *bighas*.			Total, in *bighas*.		
	Ordinary tenures.			Grants, permanently-settled, *lakhiraj*, or *nisf-khiraj* estates.								
	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.
1	2	3	4	5	6	7	8	9	10	11	12	13
Mandals or patwaris	5,183	11,575	7,149	1,819	1,002	6,114	7,915	5,452	4,790	14,917	18,029	18,053

7. The following statement gives details as to the number of qualified mandals, patwaris, and candidates for appointments on the Land Records staff in each district, and compares the figures with those of the preceding year :

Qualifications of mandals, patwaris, and candidates.

District.	Total number of mandals or patwaris on 31st March 1898.	Total number of mandals or patwaris exempted on 31st March 18,8.	Men with first-class certificates on 31st March.				Men with second-class certificates on 31st March.			
			Mandals or patwaris.		Candidates.		Mandals or patwaris.		Candidates.	
			1897.	1898.	1897.	1898.	1897.	1898.	1897.	1898.
1	2	3	4	5	6	7	8	9	10	11
Cachar	60	...	22	20	53	53	38	40	216	214
Sylhet...	56	...	34	33	5	3	21	23	16	9
Goalpara	33	...	8	9	...	...	16	17	...	...
Kamrup	300	5	78	83	47	45	217	212	90	77
Darrang	139	6	24	23	3	6	103	105	23	20
Nowgong	106	...	29	26	1	3	102	104	17	13
Sibsagar	203	3	47	46	3	...	122	132	41	35
Lakhimpur	108	...	10*	10	2	3	65*	68	20	12
Total	1,065	14	252	250	114	113	684	701	423	380

* Revised figures.

On the 31st March 1898, 951 mandals and patwaris out of 1,065 employed in the province were qualified in surveying, as against 936 out of 1,063 on the 31st March 1897. The number of mandals and patwaris with first-class certificates or equivalent qualifications had fallen from 252 to 250. This is due to deaths, resignations, and appointments of first-grade mandals as mauzadars. The total number of mandals and patwaris without any survey certificates was 100 (excluding 14 exempted from passing in surveying), against 112 (excluding 15 exempted) at the end of the previous year.

8. As in last year, there were three survey schools in the province, one at Gauhati, one at Jorhat, and one at Dibrugarh. The following statement gives details as to the number of pupils passed by each school during the year, and the average cost per pupil:

Survey schools.

Year.	Number of pupils who received first-class certificates.				Number of pupils who received second-class certificates.				Total passed.	Total cost of the school.	Total receipts.	Net cost.	Average net cost of each passed pupil.
	Mauzadars.	Mandals.	Candidates.	Total.	Mauzadars.	Mandals.	Candidates.	Total.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14
										Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1896-97. Gauhati	..	..	17	17	..	4	67	71	88	1,210 7 0	1,031 0 0	179 7 0	2 0 8
1896-97. Jorhat	..	2	..	2	..	5	17	22	24	485 0 0	258 0 0	227 0 0	9 7 4
1896-97. Dibrugarh ..	..	..	..	..	..	3	12	15	15	574 12 6	110 0 0	464 12 6	30 15 9
Total 1896-97.. ..	..	2	17	19	..	12	96	108	127	2,270 3 6	1,399 0 0	871 3 6	6 13 9
1897-98. Gauhati	..	1	14	15	..	..	47	47	62	1,153 3 3	693 8 0	459 11 3	7 6 8
1897-98. Jorhat	..	..	..	..	..	6	12	18	18	571 0 8	205 0 0	366 0 8	20 5 4
1897-98. Dibrugarh ..	..	..	1	1	..	2	7	9	10	528 0 0	100 0 0	428 0 0	42 12 9
Total 1897-98	..	1	15	16	..	8	66	74	90	2,252 3 11	998 8 0	1,253 11 11	13 14 9

The number of pupils who passed the second-class examination shows a decrease in every school, which accounts for the increase in the average net cost of each passed pupil. The falling off in the number of pupils in Kamrup is perhaps due to the distress caused by the earthquake of the 12th June 1897. Two examinations for first-class survey certificates were held by the Superintendent of Land Records at the Gauhati survey school during the year, and one examination at each of the survey schools at Jorhat and Dibrugarh. Fifteen pupils from the Gauhati, one from the Dibrugarh, and none from the Sibsagar school passed the examination. None of these results can be called good.

9. Two tahsildars of the Assam Valley were examined by the Superintendent of Land Records under the provisions of Rule 7, Section IV, Chapter V of the Manual of Executive Rules, and both of them passed the required test. Of the 29 tahsildars in the province, 23 have now passed in practical surveying and four have been exempted; the remaining two, who are newly appointed, have not yet undergone the required test in practical surveying.

Survey qualifications of tahsildars and mauzadars.

The following statement shows the number of Assam Valley mauzadars who had qualified in surveying on the 31st March 1898, as compared with the figures of the preceding year:

District.	Total number of mauzadars on 31st March 1898.	Number of mauzadars with first-class certificates on 31st March		Number of mauzadars with second-class certificates on 31st March	
		1897.	1898.	1897.	1898.
1	2	3	4	5	6
Goalpara	7	1	1	1	1
Kamrup...	8	4	4	2	2
Darrang	13	5	5	3	3
Nowgong	23	5	6	2	3
Sibsagar	23	...	1	16	17
Lakhimpur	31	7	7	4	4
Total	105	22	24	28	30

10. The statement below shows the number of mandals, patwaris, and supervisor kanungos whose papers were examined by Mr. Monahan, the permanent Director of this Department, the Assistant to the Director of Land Records, the Superintendent of Land Records, and Mr. Lees who was specially deputed under this department to enquire into the effects of the earthquake and floods in the districts of Kamrup and Nowgong :

Inspection by the Director of Land Records and Agriculture, the Assistant to the Director of Land Records and Agriculture, the Superintendent of Land Records, and Mr. Lees.

District.	Subdivision.	Total number of supervisor kanungos in the cadastrally-surveyed areas.	Number of kanungos whose work was inspected by				Total number of mandals or patwaris in cadastrally-surveyed areas.	Total number of mandals and patwaris whose work was inspected by				Remarks.
			Director of Land Records and Agriculture, Assam.	Assistant to the Director of Land Records and Agriculture, Assam.	Superintendent of Land Records.	Mr. D. H. Lees, specially deputed to enquire into the effects of the earthquake and floods.		Director of Land Records and Agriculture, Assam.	Assistant to the Director of Land Records and Agriculture, Assam.	Superintendent of Land Records.	Mr. D. H. Lees, specially deputed to enquire into the effects of the earthquake and floods.	
1	2	3	4	5	6	7	8	9	10	11	12	13
Kamrup ...	Barpeta ...	3	3	...	3	...	61	7	...	60	...	
	Gauhati ...	11	3	...	9	...	210	64	...	169	...	
Darrang ...	Mangaldai ...	4	...	...	4	...	81	...	...	72	...	
	Tezpur ...	2	2	...	2	...	34	26	...	26	...	
Nowgong ...	Nowgong ...	8	8	...	8*	...	155	16	...	155*	57	*Inspected twice.
Sibsagar ...	Golaghat ...	2	...	...	2	...	52	...	43	50	...	
	Jorhat ...	4	4	...	4	...	73	32	53	70	...	
	Sadr ...	3	3	...	3	...	69	13	64	69	...	
Lakhimpur	North Lakhimpur.	1	1	...	...	...	20	14	...	...	...	
	Dibrugarh ...	2	2	...	2	...	29	17	...	28	...	
Goalpara ...	Sadr (Bijni and Sidli).	1	...	...	1	...	22	...	...	17	...	
Sylhet ...	Jaintia and Pratabgarh.	4	4	...	3	...	56	42	...	39	...	
Total ...	.....	45	30	...	41	...	862	231	160	755	57	

In accordance with paragraph 6 of letter No. 253Agri.—3923R., dated the 21st September 1896, from the Secretary to the Chief Commissioner, Mr. Monahan did not attempt to personally inspect the work of every supervisor kanungo and mandal in the Assam Valley, but confined himself to examining the papers of supervisor kanungos in such districts as he was able to visit, and a few mandals in each supervisor kanungo's circle inspected. A detailed inspection of the work of the Land Records staff in Jaintia was made by the Director in March 1898. The Superintendent of Land Records was on tour altogether for 270 days during the year. In addition to the inspection work shown in the above statement, he visited Cherrapunji, when returning from his tour in the Surma Valley in April 1897, with a view to arrange with the Deputy Commissioner. Khasi and Jaintia Hills, for the survey of the coal mines situated in the Laobah Hls, near that station. During September, October, and part of November, he held a training class at Tezpur for the purpose of imparting instruction in the use of the theodolite to certain selected Sub-Deputy Collectors, supervisor kanungos, and mandals,

During the first half of March, Mr. O'Donel was employed on the survey and demarcation of the boundary line between the Goalpara and Garo Hills districts. The district of Nowgong, which was not visited by him last year, was visited twice during the year under report. The subdivision of North Lakhimpur was not inspected by him during the year, as at the time proposed for his visit there the road had become badly breached in consequence of the earthquake.

A brief account of the results of the inspections of village maps and papers in each of the districts to which cadastral survey has been extended is given below :

Sylhet.—Pratabgarh.—On the whole, there has been some improvement over last year in the method of showing changes on the maps, the conventional signs being in general correctly used. But the work of preparing the papers for the current year's settlement was very backward at the time of Mr. Monahan's inspection, and the periodic and annual *dág chithas* were not correctly prepared.

Jaintia.—There has been a considerable improvement in the patwaris' survey, and the *nutan* and *halabadi* lands of the current year had been in most cases surveyed by the proper method so far as the maps show. The patwaris' work had been tested by check-lines to a fair extent, but there should have been more of such testing. Field work had also not been sufficiently tested by the Sub-Deputy Collector, so that there is no adequate guarantee that the kanungos' testing had been thoroughly carried out. One very bad case of fudging on the part of a supervisor kanungo was brought to light, and the kanungo was punished by removal from his post.

Goalpara.—Mr. Monahan could not inspect the work of the Land Records staff employed in this district. The Superintendent of Land Records inspected the work of all the mandals employed there, and was fairly well satisfied.

Kamrup.—In the sadr subdivision, the work of testing mandals' field work by supervisor kanungos was neglected, and the testing of crop entries was, as usual, backward. Certain cases of under-classification and illegal deduction of lands as *faut ferar* were also noticed in some kanungos' circles. Considering the special difficulties under which the duties of the Land Records staff were carried on this year, the state of Land Records work in the Barpeta subdivision was creditable to the Sub-Deputy Collector and the supervisor kanungos.

Darrang.—The work of the supervisor kanungos and mandals had been very little if at all, supervised by the Sub-Deputy Collector of the sadr subdivision, Babu Bhola-Nath Das, the result being that the *dariabad* settlement and inspection of crops were extremely backward. In Mangaldai, the testing of field measurements was much neglected by the mandals and allowed to pass unnoticed by the kanungos. The examination of relinquished land was not even attempted in any of the four supervisor kanungos' circles.

Nowgong.—The preparation of the papers of the *dariabad* settlement was backward, and there had been considerable laxity in the matter of deducting lands from settlement as *faut ferar*. Mr. D. H. Lees, who was specially deputed to enquire into the effects of the earthquake and floods in the districts of Kamrup and Nowgong, remarks that " the most noticeable feature of the settlement work in the Nowgong district is the enormous area of land improperly excluded from settlements for various reasons, chiefly under the heads *faut ferar*, *patit khiraj*, *hukum mate bád*, damaged by earthquake, etc." His enquiry also showed that there was more or less concealed cultivation in almost every village, and that the classification of *baotali* land had received very little attention.

Sibsagar.—In the sadr subdivision, Mr. Monahan remarked that there had been some improvement in the survey methods of the mandals and in the writing up of their registers. It was, however, evident that there was room for the display of much greater energy by the supervisor kanungos. In Jorhat, the supervision exercised by the kanungos over the mandals leaves much to be desired. In Golaghat, the testing of mandals' field work by supervisor kanungos was insufficient.

Lakhimpur.—The state of the Land Records staff in the North Lakhimpur subdivision was far from satisfactory, and the kanungo is mainly responsible for this. There was no Sub-Deputy Collector in this subdivision, except for 32 days, during the year under report. The state of the Land Records Department in the sadr subdivision was not creditable to the Sub-Deputy Collector, Babu Hem Chandra Goswami, and the duty of supervising the kanungos and mandals had been very seriously neglected by him.

11. The statement below shows the number of days spent on tour by each of the Sub-Deputy Collectors who held charge of subdivisions during the year; details of the inspection work done by them are given in Appendix A:

Touring and inspection by Sub-Deputy Collectors.

Name.	Subdivision.	Number of days in charge.	Number of days on tour.			Remarks.
			In cadastral mauzas.	In non-cadastral mauzas.	Total.	
1	2	3	4	5	6	7
Babu Purna Chandra Mitra, Sub-Deputy Collector.	North Sylhet (Jaintia)	365	184	...	184	
Babu Tripura Charan Mukharji, Sub-Deputy Collector.	Karimganj ...	216	61	10	71	
Munshi Faizuddin Ahmad, Sub-Deputy Collector.	Dhubri	365	260	46	306	
Babu Rajani Kanta Bardalai, Sub-Deputy Collector.	Barpeta	38	5	...	5	
Babu Abhaya Sankar Guha, Sub-Deputy Collector.	Ditto	327	158	2	160	
Babu Bhola Nath Das, Sub-Deputy Collector.	Gauhati	131	41	...	41	
Babu Rajani Kanta Bardalai, Sub-Deputy Collector.	Ditto	234	156	13	169	
Babu Jajneswar Das Gupta, Sub-Deputy Collector.	Mangaldai ...	365	164	11	175	
Babu Krishna Chandra Chaudhuri, Sub-Deputy Collector.	Tezpur (*a*) ...	37	12	1	13	(*a*) The subdivision was without a Sub-Deputy Collector for 100 days.
Babu Bhola Nath Das, Sub-Deputy Collector.	Ditto	228	54	56	110	
Babu Radha Mohan Das, Sub-Deputy Collector.	Nowgong ...	365	179	6	185	
Babu Raj Kumar Ray, Sub-Deputy Collector.	Golaghat (*b*) ...	94	28	6	34	(*b*) The subdivision was without a Sub-Deputy Collector for 25 days.
Babu Sarat Chandra Lahiri, Sub-Deputy Collector.	Ditto	246(*c*)	111	5	116	(*c*) Exclusive of 23 days spent in Tezpur theodolite class.
Babu Radhakanta Handiqui, Sub-Deputy Collector.	Jorhat	365	172	8	180	
Munshi Didaruddin Ahmad, Sub-Deputy Collector.	Sibsagar sadr ...	301(*d*)	158	9	167	(*d*) Exclusive of 64 days spent in the survey camp in the Eastern Duars.
Babu Ram Kumar Aditya, Sub-Deputy Collector.	North Lakhimpur ...	32(*f*)	13	7	20	(*f*) The subdivision was without a Sub-Deputy Collector for the rest of the year.
Babu Hem Chandra Goswami, Sub-Deputy Collector.	Dibrugarh ...	333(*e*)	96	47	143	(*e*) Exclusive of 32 days spent in Tezpur theodolite class.

Munshi Faizuddin Ahmad, Sub-Deputy Collector, Dhubri, spent the greatest number of days on tour, 306. The amount of touring done by Babu Hem Chandra Goswami, who held charge of the sadr subdivision of Lakhimpur for the greater part of the year, was insufficient, and his work generally has been unfavourably commented on

Considering the number of days for which Babu Tripura Charan Mukharji held charge of the Karimganj subdivision, the amount of touring done by him was not satisfactory. In the course of his inspection Mr. Monahan found that Babu Bhola Nath Das (Tezpur) had not adequately supervised the supervisor kanungos' and mandals' work, and that Babu Abhaya Sankar Guha (Barpeta) showed a satisfactory outturn of work.

Touring and inspection by supervisor kanungos and surveyors.

12. The touring and inspection work done during the year by the supervisor kanungos and the two surveyors at Gauhati and Dibrugarh is shown in detail in Appendix B. The statement below shows that the supervisor kanungos of 22 out of 51 circles were on tour for not less than 200 days, the minimum prescribed by rules. As noticed in last year's report, the Cachar kanungos will not enter upon their regular duties until the completion of the resettlement of the district. The amount of touring done by the supervisor kanungos of Sylhet (Jaintia) falls short of the minimum of 200 days per annum laid down by rule. This deficiency is to some extent accounted for by the delay in the preparation of papers for the regular settlement owing to the effects of the earthquake, and by the time which was occupied this year in carrying out mutations in office; but more touring should nevertheless have been done, and it is hoped that next year the prescribed minimum of 200 days will be worked up to by all the supervisor kanungos. In the Assam Valley all the supervisor kanungos of the Barpeta subdivision, 7 out of 8 kanungos of Nowgong and 2 out of 3 kanungos of Lakhimpur, complied with the rule referred to above. The kanungos of the Mangaldai subdivision have done a more satisfactory amount of touring than in last year. The touring done by the Government surveyors both at Gauhati and Dibrugarh fell short during the year under report, as compared with the preceding year :

District.	Subdivision.	Name of circle.	Name of supervisor kanungo or surveyor.	Number of days in charge.	Number of days on tour.	Remarks.
1	2	3	4	5	6	7
Cachar ...	Hailakandi...	Hailakandi ...	Binod Behari Chaudhuri ...	365	132	
,, ...	Sadr ...	Katigora (I) ...	Gopi Charan De	365	131	
,, ...	,, ...	,, (II) ...	Kamini Kumar De ...	268	90	
,, ...	,, ...	Chatlahaor ...	Ditto	84	82	
,, ...	,, ...	,, ...	Dina Nath Ghose ...	279	84	
,, ...	,, ...	Sadr (I) ...	Shyama Charan Guha ...	328	149	
,, ...	,, ...	,, ...	Brajendra Kisor Das ...	37	...	
,, ...	,, ...	,, (II) ...	Shambhuram Das ...	365	114	
Sylhet ...	North Sylhet	Circle No. I ...	Sashi Kumar Kar ...	291	90	
,, ...	,, ...	,, ...	Brajendra Kisor Das, Offg. ...	74	37	
,, ...	,, ...	,, II ...	Kamini Kumar De ...	104	25	
,, ...	,, ...	,, ...	Hari Mohan Das, Offg. ...	31	...	
,, ...	,, ...	,, ...	Kumudini Kanta Mazumdar ...	230	118	
,, ...	,, ...	,, III ...	Abdus Sabur	365	167	
,, ...	,, ...	,, IV ...	Ambika Charan Banerji ...	354	141	
Goalpara ...	Dhubri ...	Bijni ...	Rati Ram Das	365	209	
Kamrup ...	Barpeta ...	Bajali ...	Joyram Deka	304	149	
,, ...	,, ...	,, ...	Purnananda Das	61	60	
,, ...	,, ...	Barpeta ...	Ellias Ali	365	203	
,, ...	,, ...	Roha ...	Bhagirath Deka	365	220	
,, ...	Gauhati ...	Beltala ...	Nityananda	158	52	
,, ...	,, ...	,, ...	Birti Sen	207	117	
,, ...	,, ...	Palasbari ...	Konnath Deka	299	135	

District.	Subdivision.	Name of circle.	Name of supervisor kanungo or surveyor.	Number of days in charge.	Number of days on tour.	Remarks.
1	2	3	4	5	6	7
Kamrup ...	Gauhati ...	Palasbari ...	Chandiram	25	8	
,, ...	,, ...	,, ...	Cheniram	15	13	
,, ...	,, ...	,, ...	Mantanram Das	26	13	
,, ...	,, ...	Boko ...	Rangdeb Sarma	365	189	
,, ...	,, ...	Patidarrang ...	Batiram Das	365	168	
,, ...	,, ...	Hajo ...	Jiuram	365	200	
,, ...	,, ...	Barkhetri ...	Molan Chandra Bora ..	315	173	
,, ...	,, ...	,, ...	Lakshmiram Das ...	50	2	
,, ...	,, ...	Barigog ...	Titaram Gagai	365	192	
,, ...	,, ...	Panduri ...	Cheniram	236	128	
,, ...	,, ...	Nalbari ...	Santiram Das	365	200	
,, ...	,, ...	Tambulpur ...	Jagatram Das	365	210	
,, ...	,, ...	Baroma ...	Madhab Ram Datta ...	365	190	
Darrang ...	Mangaldai ...	Patharughat ...	Chandra Kanta Sarkar ...	365	190	
,, ...	,, ...	Mangaldai ...	Kalamani Das	365	217	
,, ...	,, ...	Kalaigaon ...	Rammal Das	365	195	
,, ...	,, ...	Bengbari ...	Bahuram Das	238	85	
,, ...	,, ...	,, ...	Jagannath Deka	127	114	
,, ...	Tezpur ...	Eastern circle...	Gangaram Das	184	144	
,, ...	,, ...	,, ,, ...	Nandi Nath Sarma ...	181	88	
,, ...	,, ...	Western circle...	Durgaram Datta	4	...	
,, ...	,, ...	,, ,, ...	Manuram Talukdar ...	323	180	
Nowgong ...	Nowgong ...	Town ...	Puaram Mahanta	365	216	
,, ...	,, ...	Silghat ...	Ramrath Datta	238	169	
,, ...	,, ...	,, ...	Govindaram Datta ...	61	9	
,, ...	,, ...	,, ...	Molan Chandra Bora ...	40	35	
,, ...	,, ...	Doboka ...	Tara Nath Bora	320	236	
,, ...	,, ...	,, ...	Govindaram Datta ...	45	...	
,, ...	,, ...	Roha ...	Minaram Das	327	189	
,, ...	,, ...	,, ...	Shibnath Sarma	38	24	
,, ...	,, ...	Dhing ...	Govindaram Datta ...	259	234	
,, ...	,, ...	,, ...	Umakanta Sarma ...	106	6	
,, ...	,, ...	Gerua ...	Surath Chandra Bora ...	50	22	
,, ...	,, ...	,, ...	Gopal Chandra Goswami ...	125	18	
,, ...	,, ...	,, ...	Umakanta Sarma	156	118	
,, ...	,, ...	,, ...	Kalaram Bardalai	5	...	
,, ...	,, ...	Ghugua ...	Danpati Das	83	57	
,, ...	,, ...	,, ...	Umakanta Sarma	27	17	
,, ...	,, ...	,, ...	Lashmiram Das	220	112	
,, ...	,, ...	,, ...	Ramrath Datta	35	26	
,, ...	,, ...	Mayang ...	Gajendra Narayan Das ...	365	223	

District.	Subdivision.	Name of circle.	Name of supervisor kanungo or surveyor.	Number of days in charge.	Number of days on tour.	Remarks.
1	2	3	4	5	6	7
Sibsagar ...	Golaghat ...	Northern circle	Manuram Talukdar ...	39	31	
,, ...	,, ...	,, ,, ...	Durgaram Datta	326	212	
,, ...	,, ...	Southern ,, ...	Bhakatram Datta	365	196	
,, ...	Jorhat ...	Eastern ,, ...	Bholaram Datta	298	193	
,, ...	,, ...	,, ,, ...	Mahiram Das (junior) ...	67	5	
,, ...	,,	North-western circle.	,, ,, (senior) ...	365	192	
,, ...	,, ...	South-western circle.	Katiram Das	204	101	
,, ...	,, ...	,, ,, ...	Mahiram Das (junior) ...	161	103	
,, ...	,, ...	Majuli ...	Minaram Das	39	30	
,, ...	,, ...	,, ...	Shibnath Sarma	326	182	
,, ...	Sadr ...	Eastern circle ..	Shibram Bora	365	180	
,, ...	,, ...	Central ,, ...	Govinda Nath Roy ...	335	180	
,, ...	,, ...	,, ,, ...	Malbhog Gagai	18	13	
,, ...	,, ...	Western ,, ...	Lalitram Chaudhuri ...	365	203	
Lakhimpur ...	North Lakhimpur.	North Lakhimpur.	Sahabuddin Ahmed ...	207	103	
,, ...	,, ...	,, ...	Bhabiram Das	158	133	
,, ...	Dibrugarh ...	Dibrugarh ...	Maheswar Das	340	203	
,, ...	,, ...	,, ...	Baparam Das	25	5	
,, ...	,, ...	Chabua ...	Lakshmikanta Das ...	274	131	
,, ...	,, ...	,, ...	Janardan Sarma	91	46	
Kamrup ...	Gauhati ...	...	Samudra Narayan Das, surveyor.	365	138	
Lakhimpur ...	Dibrugarh ...	...	Mazaffar Ali, surveyor ...	243	132	
,, ...	,, ...	...	Chandreswar Changkakati, offg. surveyor.	122	42	

13. Brief details of the inspection work done by Deputy Commissioners and Subdivisional Officers are given in the statement below; full particulars will be found in Appendix C :

Inspection of the Land Records staff by District and Subdivisional Officers.

I.—Inspections by Deputy Commissioners.

Name of Deputy Commissioner.	District.	Supervisor kanungos.		Mandals.				
				In cadastral area.			In non-cadastral area.	
		Total number.	Number whose work was inspected.	Total number.	Number whose papers were inspected.	Number whose maps were checked.	Total number.	Number whose work was inspected.
1	2	3	4	5	6	7	8	9
Captain P. R. T. Gurdon ...	Kamrup ...	14	...	271	21	1	29	5
Lieutenant-Colonel M. A. Gray...	Darrang ...	6	3	115	22	7	24	...
C. G. M. Kennedy, Esq. ...	Nowgong ...	8	4	155	43	3	11	...
F. C. Henniker, Esq., I.C.S. ...	Lakhimpur ...	3	2	49	5	5	59	5
Total	.....	31	9	590	91	16	123	10

II.—Inspections by Subdivisional Officers.

Name of Subdivisional Officer.	District.	Subdivision.	Supervisor kanungos.		Mandals.				
					In cadastral area.			In non-cadastral area.	
			Total number.	Number whose work was inspected.	Total number.	Number whose papers were inspected.	Number whose maps were inspected.	Total number.	Number whose work was inspected.
1	2	3	4	5	6	7	8	9	10
Rai Madhab Chandra Bardalai, Bahadur.	Kamrup ...	Barpeta ..	3	...	61	7	6	9	5
Lieutenant A. Playfair ...	Darrang ...	Mangaldai...	4	3	81	40	5	3	1
Captain Herbert ...	Sibsagar ...	Golaghat ...	2	...	52	4	4	3	...
F. E. Jackson, Esq. ...	Ditto ...	Ditto ...				2	2		
B. C. Allen, Esq. ...	Ditto ...	Jorhat ...	4	4	73	54	6	4	2
Total	...	... ...	13	7	267	107	23	19	8

It is to be regretted that there has been a decrease in the amount of inspection done by Deputy Commissioners and Subdivisional Officers, as compared with that of the preceding year. Valuable assistance was, however, rendered during the year under report by the Deputy Commissioners of Kamrup, Darrang, and Nowgong and Subdivisional Officers of Mangaldai and Jorhat in respect of supervising the Land Records staff. In Sibsagar no inspection of supervisor kanungos' or mandals' work was done by the Deputy Commissioner.

Testing by Sub-Deputy Collectors.

14. Full particulars of testing done by Sub-Deputy Collectors will be found in Appendix D. Check-lines run independently and those run with other officers have been shown separately. It will be seen from the statement that the total length of check-lines run by these officers during the year amounted to 670 linear miles, as against 771 miles in the preceding year. Excluding lines run in surveying waste land grants and testing the demarcation of special estates, the total length of check-lines comes to 449 miles, or 50 miles less than in the preceding year. The decrease is chiefly noticeable in the Mangaldai and Golaghat subdivisions, but it may be also noted that from various causes most of the subdivisions were without a Sub-Deputy Collector at some time or other during the year.

Munshi Faizuddin Ahmad of Dhubri ran the greatest length of check-lines, 101·07 miles. Next comes Babu Hem Chandra Goswami, of Dibrugarh, who ran 80·73 miles of check-lines, but of this, 64·35 miles were run in surveying waste land grants and in testing the demarcation of special estates. Good outturns of check lines run in testing current surveys are shown by Babu Rajani Kanta Bardalai (57·34 miles) and Babu Radha Mohan Das (51·08 miles). Babus Raj Kumar Rai and Radha Mohan Das discovered 207 and 197 acres, respectively, of concealed cultivation.

Testing by supervisor kanungos and surveyors.

15. The testing done by the supervisor kanungos is shown in detail in Appendix E. The total length of check-lines run by these officers during the year comes to 2,040·82 linear miles or 8·75 linear miles per square mile of fluctuating cultivation, as against 2,133·95 linear miles in the preceding year and 2,058·40 miles in 1895-96. These figures are, on the whole, satisfactory, but there is still a tendency on the part of supervisor kanungos to make up their outturn by running numerous lines in convenient localities, neglecting tracts which are difficult of access or where there is much jungle, and in which errors of survey and concealed cultivation are more likely to occur. As already noticed in paragraph 10 above, a supervisor kanungo in Jaintia was detected by Mr. Monahan to have shown a check-line as run when it was clear from local enquiry that he had not run any such line. For this he was removed from the post of supervisor kanungo.

Ratiram Das, of Bijni, ran the greatest length of check-lines (91·86 linear miles). Next to him comes Bhagirath Deka, of the Roha circle, Kamrup, who ran 86·89 linear miles. Munshi Ellias Ali, of the Barpeta circle, and Govinda Ram Datta, of the Dhing

circle, ran 84·18 and 78·39 miles respectively. The length of check-lines run by the supervisor kanungos of the Palasbari circle in Kamrup and of the town circle in Nowgong was below the prescribed minimum of 4 linear miles of check-line per square mile of fluctuating cultivation.

Testing by tahsildars, mauzadars and tahsil muharrirs.

16. The testing done by tahsildars is shown in Appendix F, and that by mauzadars and tahsil muharrirs in Appendix G. The total length of check-lines run by tahsildars during the year comes to 160·16 miles, as against 201·42 miles in the preceding year and 182·46 miles in 1895-96. The largest length of check-lines (22·29 miles) was run by the tahsildar of Hajo in the Kamrup district. As in the preceding year, the tahsildar of Samaguri in Nowgong shows a deficient amount of check-lines, while the sadr tahsildar of the same district did no testing at all. The testing done by the tahsildar of Boko in Kamrup is insufficient in view of the amount of fluctuating cultivation in his jurisdiction. The tahsildars of Golaghat and Namtidal in the Sibsagar district show a slight improvement in the work of testing entries in the mandals' papers without check-lines, but the other tahsildars of the same district and the tahsildar of Dibrugarh have, this year also, neglected this duty, which is not satisfactory, as there is not much fluctuating cultivation in the jurisdictions of these tahsildars. The naib tahsildars of the Kanairghat and the sadr tahsils of the Jaintia parganas exercised due supervision over the patwaris' work, testing surveys in 15 villages, examining the papers of 30 patwaris, and running 5·11 miles of check-lines in all.

Check-lines run during the year by mauzadars and tahsil muharrirs aggregate 94·96 miles, against 147·35 miles in the preceding year and 97·53 miles in 1895-96, there having been a falling off in all subdivisions. The decrease was most noticeable in the district of Nowgong.

Testing by Deputy Commissioners and Subdivisional Officers.

17. The testing carried out during the last two years by District and Subdivisional Officers is shown in the following statement:

District.	Subdivision.	Testing by check-lines.						Testing without check-lines.			
		Total area surveyed up to		Total area of fluctuating cultivation.		Linear miles of check-lines run.		Total area unsurveyed in		Area tested.	
		1896-97. *	1897-98. †	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.
1	2	3	4	5	6	7	8	9	10	11	12
		Sq. miles.	Sq. miles.	Acres.	Acres.			Sq. miles.	Sq. miles.	Acres.	Acres.
Goalpara ...	Dhubri ...	131·73	204·13	4,485	7,876	...	...	2,252·27	2,179·87	...	...
	Goalpara ...	...	...	...	...	...	...	1,570·00	1,570·00	...	...
Kamrup ...	Barpeta ...	548·22	548·22	19,834·13	19,103	8·19	3·76	677·78	677·78	73·13	179·59
	Gauhati ...	1,420·48	1,420·48	30,052	34,209	2·98	3·85‡	987·06	987·06	46	...
Darrang ...	Mangaldai ...	721·83	721·83	8,248	9,613	3·27	4·92	551·96	551·96	26·40	...
	Tezpur ...	231·47	250·01	6,671	5,262	6·67	9·82	1,910·29	1,891·75	...	...
Nowgong ...	Nowgong ...	1,108·39	1,108·39	44,103	44,420	2·60	2·12	2,152·06	2,152·06	...	...
Sibsagar ...	Golaghat ...	348·66	348·66	8,635	7,718	0·86	2·49	566·34	566·34	...	...
	Jorhat ...	677·65	677·65	8,828	7,664	1·57	4·39	240·36	240·36	...	16·44
	Sadr ...	683·80	683·80	9,333·03	7,126	...	...	306·20	306·20	...	...
Lakhimpur ...	North Lakhimpur .	83·61	83·61	2,205·48	2,112	1·28	...	1,077·39	1,077·39	15·53	...
	Dibrugarh ...	215·19	215·19	2,252·75	3,418	...	2·14	2,347·81	2,347·81	11·65	12·17
Sylhet ...	South Sylhet ...	...	...	...	...	0·68	...	...	...	...	...
	Karimganj	...	...	...	...	1·49	...	...	...	...	...
	Total ...	6,171·03	6,261·97	144,647·39	148,521	29·59	33·49	14,640·42	14,548·58	172·71	20·20

* This excludes the area surveyed by local agency in different districts during the year 1896-97.
† Ditto ditto ditto 1897-98.
‡ Of these 2·99 miles were run by the Assistant Commissioner of Gauhati.

The total length of check-lines run by these officers in 1897-98 was 33·49. The greatest length of check-lines (9·82) was run by Colonel Gray, Deputy Commissioner of Darrang. Useful testing was also done by Lieutenant Playfair, Subdivisional Officer,

Mangaldai, Mr. B. C. Allen, Subdivisional Officer, Jorhat, and Rai Madhab Chandra Bardalai, Bahadur, Subdivisional Officer, Barpeta. The Deputy Commissioners of Sylhet, Goalpara, and Sibsagar and the Subdivisional officers of Karimganj and North Lakhimpur ran no check-lines during the year.

Year.	Length of check-lines, in miles.	Area tested without check-lines, in acres.	Year.	Length of check-lines, in miles.	Area tested without check-lines, in acres.
1888-89 ...	8·57	2,659	1893-94	12·77	527
1889-90 ...	1·84	3,539	1894-95	29·41	254
1890-91 ...	...	1,436	1895-96	55·69	840
1891-92 ...	7·29	390	1896-97	29·59	173
1892-93 ...	13·25	448	1897-98	33·49	208

Figures showing the testing carried out by Deputy Commissioners and Subdivisional Officers during the past ten years are given in the margin.

Total testing done.

18. In addition to the testing done by the district staff, the field surveys of mandals and patwaris were tested by the Superintendent of Land Records to the extent shown below:

—	Number of check-lines.		Number of *katans*.		Number of offsets.		Length of check-lines, in miles.		Remarks.
	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	
1	2	3	4	5	6	7	8	9	10
Superintendent of Land Records...	26	15	339	147	351	259	14·82	8·69	In extension survey.
	6	18	88	227	109	338	2·36	11·47	In professionally-surveyed area.
Total	32	33	427	374	460	597	17·18	20·16	

Mr. Lees, who was placed on special duty under this department, tested the survey of some mandals in Kamrup and Nowgong by running check-lines, but no particulars of these have been kept. He, however, did not find any great mistakes in mandals' survey.

In the following statement the total amount of testing done by the members of the district staff by means of check-lines in the cadastrally-surveyed area of each subdivision is compared with the total area of fluctuating cultivation :

District.	Subdivision.	Number of linear miles per square mile of fluctuating cultivation.				
		By Sub-Deputy Collectors.	By supervisor kanungos.	By tahsildars, mauzadars, etc.	By District and Subdivisional Officers.	Total.
1	2	3	4	5	6	7
Sylhet ...	North Sylhet (Jaintia)	9·39	44·49	3·31	...	
Goalpara ...	Dhubri	2·84	7·49	0·07	...	
Kamrup ...	Barpeta	1·44	8·42	1·53	0·13	
	Gauhati	0·93	6·33	1·57	0·06	
Darrang ...	Mangaldai ...	2·15	11·64	3·62	0·33	
	Tezpur	0·97	10·39	2·78	0·42	
Nowgong ...	Nowgong ...	0·54	6·48	0·65	0·03	
Sibsagar ...	Golaghat ...	2·51	4·63	1·27	0·20	
	Jorhat	1·38	13·69	2·89	0·37	
	Sadr	0·53	4·86	2·29	...	
Lakhimpur ...	North Lakhimpur ...	0·76	6·30	2·36	...	
	Dibrugarh ...	2·66	9·42	...	0·24	

Supervision of mandals' office work by tahsildars and mauzadars.

19. The tahsildar of Bijni, Goalpara, tested the area and revenue calculation of 300 *dágs*, and compared 4,833 *pattas* with *jamábandis*. The tahsildar and tahsil muharrirs also did a good deal of work in the matter of checking page totals and mandals' abstract books. In Kamrup, all the tahsildars, mauzadars, and tahsil muharrirs did a satisfactory amount of testing area and revenue calculations, comparing *pattas* with *jamábandis*, checking page totals, as well as checking abstracts in *jamábandis* and *dágchithas*. The best work was done by Munshi Eunas Ali, tahsildar of Boko. In Darrang the tahsildars and mauzadars did a fair amount of supervision of mandals' office work at the time of regular and supplementary settlements by checking the corrections made in the settlement papers in accordance with orders passed in mutation cases. In Nowgong, the tahsildar of Samaguri did no work in the supervision of mandals' office work. The tahsildars of the Roha and town tahsils, and the mauzadars and tahsil muharrirs did something in the way of checking the office work of mandals, but the supervision exercised was not sufficient. In the sadr subdivision of the Sibsagar district the tahsildar of the Sibsagar tahsil tested the revenue calculation of 897 *dágs*, compared 785 *pattas* with *jamábandis*, and checked 361 page totals, besides doing some checking of the abstracts in *jamábandi* and *dágchitha*. The tahsildar of the Jorhat tahsil did very little in this direction. The tahsildars of the two tahsils in the Golaghat subdivision tested the office work of the mandals to an adequate extent. The mauzadars and tahsil muharrirs of all the three subdivisions of Sibsagar did something in this direction. The testing of mandals' office work done by the tahsildar of the Dibrugarh tahsil and the mauzadars of the two subdivisions of the Lakhimpur district was satisfactory. In Sylhet, it appears that the tahsildars and tahsil muharrirs of Jaintia and Pratabgarh did no testing of patwaris' office work, which is disappointing. The Deputy Commissioner has expressed his intention of remedying this state of affairs in the current year.

Registrar kanungos.

20. The registrar kanungos' offices at Sylhet (Jaintia), Barpeta, Gauhati, Tezpur, Nowgong, Jorhat, Sibsagar sadr, North Lakhimpur, and Dibrugarh and the office of the assistant registrar kanungo at Karimganj (Pratabgarh) were inspected by Mr. Monahan during the year. All these offices, except the offices at Sylhet (Jaintia) and North Lakhimpur, were found in good order. The condition of the latter two offices was not creditable to the registrar kanungos concerned, as a large number of disposed of mutation cases was pending with them for correction of the *jamábandis*. At every other place the periodic *jamábandis* were properly kept, and the work of carrying out corrections in accordance with orders passed in mutation cases was well up to date. The printed form of *parwana* to be issued to tahsildars and mauzadars for carrying out such corrections was received and brought into use in Kamrup and Nowgong; was received, but not brought into use in Jorhat and Dibrugarh; and not received at all in Sylhet and Sibsagar sadr, at the time when Mr. Monahan inspected the registrar kanungos' offices at those places In Tezpur a trypographed form was used, the printed form not having been received. At North Lakhimpur these *parwanas* were issued in manuscript.

Form of mutation orders.

21. During Mr. Monahan's inspection of the registrar kanungos' offices referred to in the preceding paragraph, he made a special point of enquiring into the progress made in the procedure followed in disposing of mutation cases, in accordance with the Chief Commissioner's Circular No. 62R., dated the 3rd December 1896, with a view to keeping the record-of-rights up to date. The result of his enquiry was as follows :

The form of tahsildars' or mauzadars' report on application for mutation had not been brought into use anywhere, except in Nowgong, at the time of inspection; in Sylhet, Tezpur, Jorhat, and North Lakhimpur the form had not been received; in Barpeta, Sibsagar sadr, and Dibrugarh the form had been received, but not brought into use. The form of final order in mutation cases had been brought into use in Sylhet, Nowgong, Sibsagar sadr, and Dibrugarh; it had been received, but not brought into use, in Barpeta and Tezpur, and not received at all in Jorhat and North Lakhimpur.

Entry of boundaries of fields in *pattas* in the Assam Valley.

22. In accordance with the Chief Commissioner's Resolution No. 2389R., dated the 12th June 1897, arrangements have been made to have the boundaries of fields entered in all leases of lands taken up in the Assam Valley districts under Section II of the Settlement Rules. In order to have the entries made in the periodic leases already in force, notices were published by the District and Subdivisional Officers, inviting the settlement-holders to file their *pattas* at the district, subdivisional, or tahsil offices, as the case may be, and when they were received, the field boundaries were entered in them by the mandals under the supervision of the supervisor kanungos and the Sub-Deputy Collectors. The *pattas* were then returned to the settlement-holders.

23. The condition of survey marks as reported by the district authorities is shown in the statement, Appendix H; an abstract is given below:

Condition of survey marks.

—	Classification.	Total number (columns 6 + 7 + 8).	Total number found in good order by mandals or patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5 or total in good order on 30th June 1897.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Total ...	(a) Trijunction prisms ...	12,254	11,487	514	102	12,001	151
	(b) Traverse stations shown by mounds and *simul* boughs.	70,351	31,336	26,701	8,775	58,037	3,539
	(c) Kanungos' mounds, including jungle mounds.	8,104	4,082	2,937	1,002	7,019	83
	(d) Prisms on boundaries of grants, etc.	6,773	6,664	56	42	6,720	11
	(e) Concrete blocks on boundaries of grants, etc.	15,402	14,795	298	186	15,093	123
	(f) Country stones on boundaries of grants, etc.	19,139	17,632	61	275	17,693	1,171
	(g) Mounds on boundaries of grants, etc.	4,944	3,207	159	1,497	3,366	81
	Grand total... ...	136,967	89,203	30,726	11,879	119,929	5,159

The condition of survey marks seen during the year by the Superintendent of Land Records and by the Sub-Deputy Collectors is shown below:

District or subdivision.	Inspected by Superintendent of Land Records.			Inspected by Sub-Deputy Collector.			Total number inspected.		
	Total number examined.	Number with living trees.	Percentage with living trees.	Total number examined.	Number with living trees.	Percentage with living trees.	Total number examined.	Number with living trees.	Percentage with living trees.
1	2	3	4	5	6	7	8	9	10
Karimganj	...	...	...	269*	252	93·68	269	252	93·68
Dhubri	42†	37	88·09	1,474†	1,434	97·28	1,516	1,471	97·03
Barpeta	194*	111	57·21	351*	220	62·68	624	381	61·05
				79†	50	63·29			
Gauhati	38*	29	76·31	208*	139	66·82	246	168	68·29
Mangaldai	141*	130	92·20	712*	670	94·10	877	823	93·84
				24†	23	95·83			
Tezpur	32*	31	96·87	118*	85	72·03	246	194	78·86
				96†	78	81·25			
Nowgong	657*	546	83·10	1,080*	617	57·13	1,835	1,204	65·61
				98†	41	41·84			
Golaghat	71*	67	94·36	643*	569	88·49	739	659	89·17
				25†	23	92·00			
Jorhat	15*	15	100·00	645*	518	80·31	687	556	80·93
				27†	23	85·18			
Sibsagar sadr	64*	59	92·18	295*	193	65·42	470	346	73·61
				111†	94	84·68			
North Lakhimpur	...	...	...	72*	72	100·00	72	72	100·00
Dibrugarh	...	...	...	302*	258	85·43	349	295	84·52
				47†	37	78·72			
Total	1,254	1,029	81·74	6,676	5,396	80·82	7,930	6,421	80·97

* In professionally surveyed area.
† „ extension survey area.

Advances and recoveries on account of demarcation.

24. The statement in Appendix I shows the advances and recoveries made up to the 31st March 1898, and the balance outstanding on that date, on account of demarcation in connection with cadastral survey operations in each district. These advances have been grouped under the same heads as in the reports for the previous years.

The bulk of the amounts outstanding under the head "(1) Advances recoverable from landholders in the areas surveyed by the professional party" consists of advances made in Cachar and for the demarcation of *ilám* and other temporarily-settled estates and unsettled lands which are being surveyed in Sylhet. The recovery of these amounts will be made as soon as the tracts concerned have been resettled. The demarcation of theodolite stations in the towns of the Assam Valley has been completed, and the advances made for the purpose have been recovered in Goalpara, and partly in Kamrup, Sibsagar, and Lakhimpur. The demarcation of trijunction points in all the areas surveyed by local agency up to and including the season 1896-97 has been completed in the districts of Kamrup, Nowgong, and Lakhimpur, and is approaching completion in the other districts, and steps are now being taken to recover the advances made on this account from the landholders of the areas surveyed. The advances made under the head "(3) Advances for demarcation of grants, permanently-settled, *lakhiraj*, and *nisf-khiraj* estates" in the Jaintia parganas have been recovered with the exception of Rs. 106-13-11, which represents the price of 21 prisms that remain in excess out of the number originally procured for the demarcation of the parganas. Eight of these prisms are reported to have been lost in the Surma during the earthquake of the 12th June 1897; arrangements have been made to utilise the remaining 13 prisms in connection with the demarcation of the areas which are now being surveyed in Sylhet. The demarcation of the estates referred to has been completed in all the districts of the Assam Valley, and the advances made for the work are being recovered in most places.

CHAPTER III.

UTILISATION OF LAND RECORDS.

Introduction of the system.

25. Mr. B. C. Basu, Assistant to the Director of this Department, having joined his appointment on the 25th September 1897, steps were taken to initiate in the Assam Valley the system of continuous enquiry into agricultural conditions and record of agricultural statistics, which is designed to provide a permanent source of information for general administrative and fiscal purposes, and specially to afford a basis for the next re-assessment of the land revenue demand. This record it is proposed to maintain, as in other parts of India, by means of a set of registers, in each of which certain revenue and agricultural statistics will be recorded annually for a circle or area unit of convenient size, and facts connected with agricultural economy and the prosperity of the cultivating classes will be noted from time to time by inspecting officers. In the Assam Valley the most convenient unit of area for the purposes of such a register is the fiscal circle known as a mauza, and forms were provisionally drawn up for a "Mauza-book" to be maintained in tracts where the cultivation is chiefly permanent. For fluctuating cultivation a somewhat different plan of enquiry will have to be adopted, the elaboration of which Mr. Monahan thought it better to postpone until the Assistant to the Director had gained some acquaintance with that peculiar feature of the Assam Valley. A set of provisional instructions was prepared at the same time for the guidance of the Land Records staff in classifying rice land and in preparing the mauza-book. The instructions applied only to tracts where the cultivation is chiefly of a permanent character. Their working was carefully tested in the Sibsagar district during the last cold weather by the Assistant to the Director, Mr. Basu. As the result of his examination, certain modifications were found to be necessary, and the instructions, as finally drafted, were recently submitted to the Chief Commissioner of Assam for approval. The revised instructions have been made applicable to all cadastrally-surveyed villages, irrespective of the character of its cultivation, whether fluctuating or permanent.

The mauza-book, as at present designed, contains a separate series of statements for each village in the mauza, to which are prefixed a set of statements for the mauza

as a whole; after each set of statements, blank pages are left for notes of inspecting officers. There are seven statements for each village, namely—

I.—Initial statistics (of area and revenue) for the first year of the current settlement (1893-94).

II.—Areas settled, relinquished, and abandoned.

III.—Revenue demand and coercive process.

IV.—Cropped areas and live stock.

V.—Wholesale prices of agricultural produce.

VI.—Sub-tenancy.

VII.—Sales of land.

In Statements II to VII inclusive, the statistics of the village are to be entered annually.

For the mauza, as a whole, there are six statements, of which the first four are abstracts of the corresponding village statements, Statement V will exhibit the results of crop cuttings, and Statement VI retail prices of rice, salt, iron, tobacco, and pulses at selected marts in the mauza. In order to obtain a permanent and systematic record of the outturn of crops and also a basis for a more discriminating assessment than that which is at present in force, arrangements have been made for a rough division of each considerable tract of permanent rice cultivation into two classes, better and worse, which will be made chiefly in accordance with the cultivator's own estimate of the comparative productiveness of fields, and for carrying out a continuous series of annual crop cuttings in lands of each class.

The introduction of the mauza-book has been commenced in Sibsagar, as that district contains the largest proportionate area of permanent cultivation, and the condition of agriculture there is generally prosperous, having suffered neither from the effects of the earthquake, nor from the epidemic of *kalá-ázár*, which has so seriously affected the districts of Lower Assam. During the last cold weather the mauza-book was introduced in the Sibsagar district, only in those villages which have a sufficient extent of permanent cultivation; it will be introduced in the remainder of the district in the course of the present year. The classification of *rupit* land, which is an important feature of the new work, has been completed by the mandals, and partly tested by the Assistant to the Director and the Sub-Deputy Collectors of the district. It is proposed to introduce the mauza-book in the Lakhimpur district during the present rainy season, and in the Darrang district and the sadr subdivision of Kamrup next cold weather.

Occasional failure.

In the course of the year under report, Mr. D. H. Lees, Assistant Commissioner, was placed on special duty under this department by the Chief Commissioner's Notification No. 7396G., dated the 9th October 1897, in order that he might make special enquiries into the damage caused by the earthquake in Nowgong and Kamrup. He was also asked to enquire into the cause of decrease of land revenue in those districts. He completed his enquiries, and submitted his report on damage done by the earthquake after the close of the year.

CHAPTER IV.

SCIENTIFIC AND NATIONAL ENQUIRY UNDER IMPERIAL CONTROL.

Meteorology.

26. There was no change in the system of rainfall registration during the year. The number of registering stations in the province on the 31st March 1898 was 107, against 103 in the preceding year. A separate report on the registration of rainfall has been submitted in accordance with the orders conveyed in letter No. 965Misc.—781R., dated the 11th March 1897, from the Officiating Secretary to the Chief Commissioner.

27. At the instance of the Reporter on Economic Products to the Government of India, specimens of the following articles for the Index Collections for the Imperial Institute and Indian Museum were forwarded to him:

Economic Products—Index Collections.

Elæocarpus ganitrus	...	...	Plants.
Leucas linifolia ...	...	...	Leaves and twigs.
Licuala peltata ...	...	...	Hats.
Lysimachia candida	...	...	Plants.
Mæsa indica ...	...	...	Leaves and berries.
Manihot utilissima	...	...	Cassava and tapioca meal.
Marsdenia tinctoria	...	...	Plants.
Melastoma malabathricum	...	...	Fruits.
Mesua ferrea ...	...	...	Flower buds.
Mucuna monosperma	...	...	Seeds and pods.

Arrangements have been made to procure specimens of eleven more articles required for the Index Collections.

Samples of the following articles were forwarded for the Commercial Collection of the Imperial Institute:

Commercial Collections.

Dyes and tans—

Bixa orellana ...	...	...	Roots, bark, and seeds.

Specimens of the following dye-producing trees and plants mentioned in the "Monograph on Dyes and Dyeing in Assam" by Mr. W. A. M. Duncan, I.C.S., which had not been scientifically identified at the time of its issue, were sent to the Reporter, and were identified as shown below:

Scientific names.			Vernacular names.
Acacia concinna ...	...	...	*Kuchiatenga.*
Alnus nepalensis	...	...	*Repo.*
Baccaurea sapida	...	...	*Bhubi.*
Bridelia retusa ...	...	...	*Paolikaet.*
Cæsalpinia digyna	...	...	*Amchangala; Teri.*
Ficus altissima ...	...	...	*Dhop*, or *Dhopabar.*
Marsdenia tinctoria	...	...	*Keruprü.*
Melastoma malabathricum	...	...	*Phutlang* or *Phutki.*
Morinda angustifolia	...	...	*Kwütho.*
Phyllanthus emblica	...	...	*Mitha ám.*
Phyllanthus sikkimensis	...	...	*Huta.*
Strobilanthes flaccidifolius	...	...	*Kalapat*; *Raspat*
Symplocos ferruginea	...	...	*Bicha.*
Symplocos racemosa	...	...	*Magwü.*
Symplocos spicata	...	...	*Bharali*, *Bharti*, or *Bharathi.*

The following specimens also were sent:

Coix lachryma (job's-tears)	...	...	Unhusked grain, husk, husked grain, *atta*, ear-rings, and other ornaments, Dzu beer.
Perilla ocimoides (Khasi, Unei—Naga, Kenia) ...	...	...	Seeds.
Æschynomene aspera (Sola pith)	...	...	Hats and stems.

A collection of specimens of cloths manufactured in the province and of the weaving machines used in preparing them was made during the year in connection with the Monograph on the Cotton Fabrics of Assam by Mr. H. F. Samman, I.C.S., and has been forwarded to the Reporter since the close of the year.

At the special request of the Reporter on Economic Products to the Government of India, the following were forwarded to him :

Solanum Indicum	...	...	... Roots, fruits, and seeds.
Flemingia vestita	...	...	... Tubers.
Ville brunea integrifolia	...	...	... Seeds.

Rhea.

Dr. Watt's Hand-book on Rhea, for the preparation of which a special enquiry was held during the previous year with regard to the varieties of the plant cultivated in the province, the methods of cultivation, and preparation of the fibre and the outturn obtained, has not yet been received. Requisitions for Rhea seeds made from time to time by the Reporter were complied with.

Cinnamomum cassia.

In continuation of the enquiries made during the two preceding years with regard to the cultivation of tezpát and the trade in its products in different parts of the province, specimens of cinnamomum cassia, which yields bark of very fine quality, were forwarded to the Reporter by the Deputy Commissioner, Lakhimpur. The Reporter asked for further information with regard to this tree, but it was not found possible to obtain any detailed information regarding it as the tree grows in the Patkoi range of hills, which lie at a great distance from the plains.

Triumfetta tomentosa.

A specimen of a plant which grows wild in South Sylhet and the Jaintia parganas, and the fibre of which is used to some extent by the natives for making ropes, was sent by Mr. Monahan from Maulvi Bazar to the Reporter on Economic Products to the Government of India for identification. It proved to be *Triumfetta tomentosa*.

Chakamara.

Flowering specimens of a form of wild jute found in the Nowgong district, and commonly known there as *Chakamara*, were forwarded to the Reporter for identification. It was identified by Dr. Watt as *Corchorus capsularis*, one of the forms of the jute plant of commerce. A second specimen in fruiting condition, presumably of a different form of wild jute known also as *Chakamara*, was identified by him as *Melachia corchorifolia*, a fibre-yielding plant, regarding which very little is at present known. As the subject is of more than mere botanical interest, the Deputy Commissioner, Nowgong, has been asked to procure further specimens of *Chakamara*, as well as specimens of any other varieties of wild jute which grow in the Nowgong district, for identification by the Reporter.

Veterinary science.

28. The statement below shows the number of deaths of cattle reported from the several districts of the province during the past two years, and the causes to which they are attributed :

1	2		3		4		5		6		7		8		9		10	
District.	Rinderpest.		Foot-and-mouth disease.		Swelling of mouth and throat.		Diarrhœa, dysentery, and cholera.		Anthrax.		Catarrh.		Other diseases.		Total.		Estimated value of cattle.	
	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.	1896-97.	1897-98.
																	Rs.	Rs.
Cachar	...	163	177	198	207	693	390	952	7	1	40	1	123	65	944	2,073	18,080	39,664
Sylhet	9,413	5,743	2,251	2,440	6,403	6,178	7,785	4,729	112	27	514	998	8,208	11,593	34,686	31,708	2,95,787	3,03,683
Goalpara	2,139	7,487	3,097	6,181	1,547	4,385	1,848	3,824	492	...	1,092	2,669	22,832	35,704	33,047	60,250	2,88,147	4,19,024
Kamrup	1,401	5,717	8,015	14,788	2,596	18,009	7,772	24,341	163	...	...	...	5,035	15,400	24,982	78,255	1,91,321	5,93,255
Darrang	2,324	2,997	1,912	2,933	588	432	1,216	4,967	28	58	102	118	1,872	2,336	8,042	13,841	62,988	1,03,042
Nowgong	133	720	1,947	4,325	722	813	2,857	2,579	...	...	...	...	2,389	4,284	8,048	12,721	72,432	1,01,768
Sibsagar	354	3,475	1,039	3,422	543	1,213	1,766	6,742	162	108	99	108	4,114	4,894	8,077	19,962	87,266	2,47,924
Lakhimpur... ...	200	34,684	296	213	285	2,296	499	646	...	81	...	...	4,199	2,772	5,479	40,692	58,270	4,06,920
Naga Hills* ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Khasi and Jaintia Hills†	...	...	20	30	...	...	3	38	...	...	...	...	...	...	23	68	320	1,198
Garo Hills‡ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	15,964	60,986	18,754	34,530	12,891	34,019	24,136	48,818	964	275	1,847	3,894	48,772	77,048	1,23,328	2,59,570	10,74,611	22,26,478

* The Deputy Commissioner is unable to furnish statistics.

† Statistics are available for Jowai subdivision only.

‡ Information not available.

The total number of deaths reported during the year was considerably more than in the preceding year. There was a notable increase of mortality in every district except Sylhet, the highest increase being in Lakhimpur, where the North Lakhimpur subdivision suffered severely from a disease which seems to be rinderpest. A proposal has been made in this district by the sadr Local Board to entertain a veterinary surgeon in view of the heavy mortality recently among cattle.

Entomology.

29. Dr. Watt's report on the results of his enquiries with regard to tea blights has been received during the year.

Locusts.

On various dates during the months of December 1897 and January 1898, swarms of locusts appeared in, and passed through, all the districts of the province, except the Naga and the Garo Hills districts. The direction of the flight of the locusts was roughly from south to north and north-east. They did some damage to the mustard crop in the Surma Valley and in Nowgong. Their appearance and movements were noticed in the weekly weather and crop reports, which were published in the *Assam Gazette*, and copies of the reports were forwarded to the Trustees of the Indian Museum for transmission to the Officer of the Indian Museum entrusted with the entomological work.

Statistics,—Agricultural and Fiscal Statistics.

30. These were compiled, as usual, in this department, and submitted in Return XLIB on the 3rd November 1897. Revised instructions for the guidance of District Officers in preparing the returns, which were drawn up and submitted for the Chief Commissioner's approval last year, issued in Chief Commissioner's Circular No. 27R., dated the 4th September 1897. With a view to obtaining annual estimates of the areas under different crops in the permanently-settled tracts of the province for the purposes of Table A3 of the return, letters were issued to the Deputy Commissioners concerned, inviting their suggestions as to the method which should be adopted.

Trade statistics.

31. The quarterly and annual reports on the rail and river-borne trade of the province were issued as usual, and a note on foreign trade was drawn up for incorporation in the annual Provincial Administration Report. Towards the close of the year the work of distribution of Quarterly Rail and River-borne Trade Reports was transferred from the Secretariat to this department.

Proposals for the introduction of new forms for the provincial returns of rail and river-borne trade, and for the alteration of the arrangement of internal trade blocks, which were submitted to the Chief Commissioner towards the close of the preceding year, were sanctioned, and the new system came into force with effect from the 1st April 1898, *i.e.*, with the return for the quarter ending the 30th June 1898.

The river traffic registration offices at Dhubri and Bhairab Bazar were inspected by Mr. Monahan during the year. He also inspected the traffic registration office at Maulvi Bazar (*Noakhali*), at which trade with Hill Tippera is registered.

Mineral statistics.

32. The return of mineral statistics was prepared in this department from information supplied by District Officers, and submitted on the 19th March 1898.

Experimental crop cuttings.

33. A note on the results of experimental crop cuttings carried out during the year with a view to the preparation of the quinquennial return of the outturn of crops has been submitted separately.

Returns of prices-current and wages.

34. The duty of receiving and compiling these returns was transferred to this department during the past year. As in last year, the following returns were compiled :

Weekly Return of retail prices-current of food-grains and salt—for publication in the *Assam Gazette*.

Fortnightly Return of retail prices-current of food-grains and salt—for submission to the Government of India in the Department of Finance and Commerce.

Fortnightly Return of wholesale prices-current—for submission to the Director General of Statistics.

Half-yearly Return showing the average wages of agricultural labourers, etc.—for submission to the Government of India in the Department of Finance and Commerce.

CHAPTER V.

SCIENTIFIC AND LOCAL ENQUIRY UNDER PROVINCIAL DIRECTION.

General remarks.

35. An agricultural expert, Mr. B. C. Basu, has now been appointed as Assistant to the Director of Land Records and Agriculture, and his services and special knowledge have been utilised (amongst other ways) in establishing an experimental farm on the site of the old Model Farm in Upper Shillong. A further account of this farm is given in paragraph 43. Seeds of different crops were also distributed to selected individuals who were found willing to undertake their cultivation.

Staple crops of the Khasi and Jaintia Hills.

36. In accordance with the orders of the Chief Commissioner, an enquiry was made during the year into the staple crops grown in the Khasi and Jaintia Hills, and a report on the subject prepared by the permanent Director was submitted in January last.

Sikkim paddy.

37. An effort is being made to encourage the cultivation of superior kinds of rice in these hills, the kind now grown by the Khasia cultivators being of an extremely coarse description. With this view some four maunds of four varieties of Sikkim rice were imported during the year from Darjeeling. A part of this seed has been sown at the experimental farm, and a part has been distributed among a number of selected Khasias and Syntengs for experimental cultivation in their own fields. The result cannot at present be given.

Boro dhan.

38. It was stated in paragraph 36 of last year's report that an experiment with *boro dhan* would be made during the year under report in the districts of Goalpara and Sibsagar. Accordingly, one maund of carefully-selected seed from Sunamganj was supplied to the Deputy Commissioner, Goalpara, and 2 maunds of the same to the Deputy Commissioner, Sibsagar. The seed supplied to the Deputy Commissioner, Goalpara, was made over to the tahsildar of Bijni, who distributed it among the raiyats. The seed did not germinate, and the experiment proved a failure. The experiment having failed in two out of three years, it seems hardly worth while to repeat it in the district of Goalpara. The seed supplied to the Deputy Commissioner, Sibsagar, was sown, as in the preceding year, at different localities in the sadr and Namtidal tahsils, but proved a failure everywhere, partly owing to late sowing and partly to want of sufficient water, and to absence of proper supervision.

Jute.

39. As reported last year, 2 maunds of jute seed were supplied to the tahsildar of Bijni and the Subdivisional Officer of Barpeta in 1896-97. The tahsildar of Bijni also procured some seed of his own motion, and he reports that the area sown with the Serajganj jute seed and the seed procured by him of his own motion was 502 *bighas*, and that the character of the crop obtained was fair, although the earthquake of the 12th June 1897 caused some damage. The average outturn is reported to have been 6 maunds and 10 seers per *bigha* for the area experimented upon by the tahsildar personally, so that the total outturn may be estimated at 3,137 maunds. The crop was sold at Rs. 3 per maund. It is satisfactory to note that the area cultivated with jute in the Bijni tahsil in 1897-98 was more than 13 times that of 1896-97, and that the raiyats are taking an interest in the cultivation of the crop. The Subdivisional Officer of Barpeta reports that the 2 maunds of seed supplied to him were distributed and sown in 68 *bighas* in his subdivision. The cultivation of 63 *bighas* was destroyed by the earthquake and subsequent floods, while that of 5 *bighas* gave an outturn of only one maund and a half or 12 seers per *bigha*. The quality of the jute produced was also bad. An exhaustive report on the cultivation of jute in Assam was drawn up by Mr. Monahan during the year, and submitted with his letter No. 814, dated the 7th February 1898, to which was annexed a short note by Mr. Basu, Assistant to the Director of this Department.

Potatoes.

40. Fifteen maunds of Khasi seed potatoes were supplied to the Superintendent of the Tezpur Jail and 4 maunds to the Superintendent of the Tezpur Lunatic Asylum for experimental cultivation. The Superintendent of the Tezpur Jail reports that the whole quantity of seeds supplied to him was planted in September 1897 on a piece of high land, measuring about 10 *bighas*, but the outturn was very poor (29 maunds 15 seers only), half the seed sown either not having germinated at all, or having dried up after sprouting in consequence of heavy rainfall shortly after sowing, which spoilt the tubers. Good results were, however, obtained at the Tezpur Lunatic Asylum. The 4 maunds planted yielded an outturn of about 20 maunds. The Superintendent reports that some of the potatoes were

of a good size, but there were many small tubers. The soil in which they were planted was stiff and clayey. Five maunds of 4 oz. setts and 5 maunds of 2 oz. setts Nainital seed potatoes procured through the Agricultural and Horticultural Society of India were supplied in November 1897 to the Superintendent, Lushai Hills, for experimental cultivation in those hills. The Superintendent reports that the potatoes are not yet ready for digging. Six seers of the Calcutta "Nainital" and $4\frac{1}{4}$, $6\frac{3}{4}$, 7, and $6\frac{3}{4}$ seers each of Sutton's "Triumph," "Early regent," "Windsor castle," and "Harbinger" seed potatoes, being surplus stock of seed procured for the Shillong Experimental Farm, were distributed to seven selected cultivators for experimental cultivation. The results of their cultivation are not yet known, and will be given in the current year's report.

41. The officers named in the margin were supplied with carrot seed in the quantities noted, procured through the Director, Department of Land Records and Agriculture, North-Western Provinces and Oudh. The result obtained from the cultivation of the seed in Kamrup was good. It was made over to the Superintendent of the Gauhati Jail and the Subdivisional Officer of Barpeta for experiment. The seeds germinated well, and the carrots obtained were large and of good quality. In Darrang only 2 seers were received in time for sowing, of which 1 seer was given to the Superintendent of the Tezpur Jail and 1 seer to the Superintendent of the Lunatic Asylum. Dr. Macnamara has a poor opinion of the crop produced. A large part of the seeds sown did not germinate, and the rest required frequent watering, the expense of which was greater than the value of the carrots. A very small proportion of the seed supplied to the Subdivisional Officer, Golaghat, germinated. The carrots produced in the Sibsagar sadr subdivision were good. Both in the Dibrugarh Jail and the North Lakhimpur subdivision the seeds germinated well, and carrots obtained were of medium size. At the former place the outturn was good. The seeds supplied to the Deputy Commissioner, Sylhet, were distributed amongst the raiyats of the Jaintia parganas, but as they were received late, and sown at an unfavourable season, no good results were obtained. The seeds supplied to the Deputy Commissioner, Goalpara, were distributed to the Superintendents of Dhubri and Goalpara Jails, Tahsildar of Bijni and Superintendent of Bijni Estate. The experiments made in the Dhubri jail and the Bijni tahsil proved a success, but it was a failure in the Goalpara subdivision, where only a few seeds sprouted. The result obtained by the Superintendent of the Bijni Estate is also reported to have been favourable. Some seed also was sown at this Department Experimental Farm, and other seed distributed to private individuals of the Khasi Hills. The carrots have not yet had time to mature, so the result cannot be stated.

Carrot seed.

Name of officer.	Quantity of seed supplied. Srs.	ch.
Deputy Commissioner, Sylhet ...	20	0
Ditto, Goalpara ...	7	0
Ditto, Kamrup ...	3	8
Ditto, Darrang (for Mr. W. Edwards, Majuli Tea Company, Limited).	20	0
Superintendent, Tezpur Jail ...	1	0
Ditto, Lunatic Asylum.	2	0
Deputy Commissioner, Sibsagar ...	6	0
Subdivisional Officer, Golaghat ...	9	0
Superintendent, Dibrugarh Jail ...	1	8
Subdivisional Officer, North Lakhimpur.	1	0

Fruit trees.

42. No very definite results having been arrived at during 1896-97 by the Civil Surgeons of Sylhet and Shillong with a view to testing the medicinal properties of Malta oranges, lemons, and citrons as a remedy for malarious fever, it was thought advisable to make over the whole of the last year's crop of the fruits to the Medical Department for its distribution among the dispensaries in Sylhet, the Khasi and Jaintia Hills, and Cachar. Only 400 fruits of citron were available for such distribution, out of which 100 were supplied to the Civil Surgeon of Cachar and 150 and 96, respectively, to the Civil Surgeons of Sylhet and the Khasi and Jaintia Hills. In Cachar, the citrons were given to the prisoners of the Silchar jail for medicinal use, and proved successful in the treatment of scurvy, the effect being the same as that of fresh limejuice. Of the 150 citrons supplied to the Civil Surgeon of Sylhet, 125 were pickled and the remainder used as lime juice. The limejuice slightly improved the gums of four patients, whereas the pickled citrons were of no use. The Civil Surgeon, Shillong, reports that there having been no scorbutic taint among the prisoners there, he could not test the anti-scorbutic property of the fruits. The citron plantation at Therriaghat was greatly damaged by the earthquake of the 12th June 1897 and subsequent heavy floods, which covered it with sand. Fifty-one trees died, and 85 are now living.

In order to replace the grafts of fruit trees which were procured from Nainital for Kohima during 1896-97, but arrived at that station almost dead, 6 grafts of each of six varieties of fruit trees were supplied during the year under report. An equal number of grafts of the same varieties was also ordered from Nainital for planting in the

sanitarium grounds at Nemotha in the Cachar district, but owing to an oversight on the part of the despatching agency, they were sent to Kohima, along with the grafts ordered for that station. All these were planted at Kohima, Tissima, Wokha, and Mokokchang and it is reported that they are doing well, except 2 in Mokokchang, which died, and 24 planted in the cemetery, the most sheltered spot in Kohima, which have come on very badly. Six lichi and 15 orange plants were supplied to the Superintendent of the Tezpur Lunatic Asylum during the year. The orange plants having died *en route* owing to defective arrangements made for their transmission, a fresh supply of 15 plants was sent. Only 2 of these plants are now living.

Experimental Farm at Upper Shillong.

43. It was stated in the last year's Annual Report that Mr. Keventer, the Manager of the Aligarh Dairy Farm, had paid a visit to Shillong in January 1897, and made enquiries as to the possibility of establishing a dairy farm near the station. The difficulty of procuring fodder during the winter months was felt to be an obstacle to the success of such an undertaking. To obviate it, Mr. Keventer recommended the experimental cultivation of certain fodder crops near Shillong, and suggested certain sites for the purpose. Before, however, commencing such experiments, it was decided to await the arrival of the agricultural expert who was shortly to be attached to this department as Assistant. Shortly after Mr. Basu's appointment to the post in September 1897, Mr. Monahan submitted proposals to the Chief Commissioner for the recommencement of the experimental cultivation on the site of the old Model Farm at Upper Shillong. The Chief Commissioner's sanction to the proposal was received in the beginning of January last. A sum of Rs. 1,000 was sanctioned to meet the expenses of the farm during the year. By the close of the year, 5 acres of grass land had been cleared and broken up with the hoe, and out of this area one-fourth of an acre had been planted with seven different varieties of potatoes, four of these having been obtained from Messrs. Suttons & Sons, of Reading, through the Secretary, Agricultural and Horticultural Society, Bengal. Owing to the late commencement of the operations, no other crops could be sown during the year under report. The results of the experimental cultivation of potatoes and of crops sown since the close of the year will be noticed in the Annual Report for the current year. Besides the fodder crops recommended by Mr. Keventer, the programme of the experimental farm includes the experimental cultivation of various new staples and of improved varieties of the crops (such as rice and potatoes) already grown in the Khasi Hills.

Breeding bulls.

44. There were five breeding bulls in the province during the year stationed at Silchar, Haflong, Sylhet (Jaintia), Naharjan tea estate (Sibsagar), and Shillong. The statement below shows the cost of the keep of these animals and the successful coverings by them :

District.	Locality where the bull is stationed.	Wages of keeper.	Cost of food.	Miscellaneous.	Total.	Number of successful coverings during 1897-98.		
						Male.	Female.	Total.
1	2	3	4	5	6	7	8	9
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.			
Cachar ...	Silchar ...	110 0 0	87 0 0	56 0 0	253 0 0	2	1	3
	Haflong ...	56 2 0	66 2 3	29 15 0	152 3 3	6	5	11
Sylhet ...	Haripur (Jaintia).	96 1 0	96 10 9	23 6 0	216 1 9	...	2	2
Sibsagar ...	Naharjan tea estate.	10 0 0	65 0 0	...	75 0 0	...	...	...
Khasi and Jaintia Hills.	Shillong ...	144 0 0	174 7 1	34 8 0	352 15 1	2	2	4
Total ...	...	416 3 0	489 4 1	143 13 0	1,049 4 1	10	10	20

Besides the above, the bulls at Haflong and Jaintia covered a large number of cows during the year, the result of which is not yet known. The bull at Naharjan was found in a very poor condition on its arrival. It took to covering cows only recently, and

there has not been time to see the result. The small expenditure under the head "Wages of keeper" for the bull at Naharjan is due to the fact that a keeper was employed for two months only when the animal newly arrived, but after that, it was looked after by the private cowherd of Mr. Forbes, the manager of the estate, under whose charge the bull is kept. It is proposed to procure, through the Superintendent, Civil Veterinary Department, Bengal, two Sitamarhi bulls of small size for the North Lakhimpur Local Board during the current year.

CHAPTER VI.

AGRICULTURAL EDUCATION.

Agricultural education.

45. As stated in paragraph 46 of the preceding year's report, proposals for a general scheme of providing suitable readers and text-books with a view to the improvement of the education of the agricultural classes were called for from the Director of Public Instruction. A short manual on mensuration and surveying has been prepared by Mr. Monahan, to meet the want of a practical text-book in those subjects for the guidance of mandals and patwaris and for use in upper primary, middle, and survey schools, and the manual in manuscript has been sent to the Director of Public Instruction for any suggestions he may wish to make before it is printed. After the manual has issued in English, steps will be taken to have it translated into Assamese and Bengali.

CHAPTER VII.

PUBLICATION OF AGRICULTURAL INFORMATION.

Weather and crop reports and mustard forecasts.

46. The weekly weather and crop reports were prepared, as usual, in this office for publication in the gazette. The preliminary and final forecasts of the mustard crops were prepared and forwarded to the Director General of Statistics.

Information obtained from circle books and District Officers.

47. As stated in paragraph 25 above, the system of maintaining "Circle or Mauza books" has been tentatively introduced in the Sibsagar district. No information of special interest bearing on agriculture was received from District Officers or officers subordinate to them during the year under report.

The ledger system.

48. In the course of the year existing ledger collections have been made as complete as possible by extracting information relating to the different subjects of these collections from old files of correspondence and official reports. Some new collections were also opened during the year. The classification of the different subjects for which separate ledgers have been maintained in this office has been revised so as to follow the arrangement prescribed by the Government of India.

Publication of special works.

49. A Note on the cultivation of Black Pepper in Assam was drawn up by Mr. B. C. Basu, for publication in the form of an agricultural ledger. The following bulletin and monograph were also issued during the year :

Bulletin No. 3.—Note on the cultivation of Rhea in Assam by Mr. F. J. Monahan, I.C.S.

Monograph on Cotton Fabrics in Assam by Mr. H. F. Samman, I.C.S.

Papers communicated to the *Agricultural Ledger.*

50. A list of papers communicated to the Reporter on Economic Products by or through the agency of this department for incorporation in the *Agricultural Ledger* is given in Appendix J.

Papers received from, and communicated to, other provincial departments.

51. Monographs on Cotton Fabrics from the provinces of Madras and Hyderabad Assigned Districts, a copy of Bengal Bulletin No. 4 of 1898 on Mustard, and copies of the Annual Reports of the different provincial departments were received during the year. The Monograph on Cotton Fabrics in Assam prepared by Mr. H. F. Samman, I.C.S., Agricultural Bulletin No. 3 of this department and the Annual Report of this Department were distributed to the Departments of Land Records and Agriculture of other provinces from the Secretariat.

CHAPTER VIII.

FINAL.

52. The following statement gives details as to the expenditure incurred by this department during the year, and compares the figures with those of the preceding year:

Expenditure.

Year.	Superintendence, etc.	Settlement offices.	Survey schools.	Kanungo establishment.	Registration of trade.	Total.
1	2	3	4	5	6	7
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1896-97 ...	43,503 0 11	69,563 1 7	2,270 3 6	1,41,256 10 0	4,253 15 9	2,60,846 15 9
1897-98 ...	51,022 12 10*	79,745 6 3†	2,252 3 11	1,41,507 10 9‡	4,454 2 5§	2,78,982 4 2

* This includes—

	Rs. a. p.
(*a*) Head office charges... ...	38,374 14 8
(*b*) Charges for the office of the Superintendent of Land Records	10,003 15 4
(*c*) Experimental cultivation ...	1,280 8 0
(*d*) Veterinary charges	1,049 4 1
(*e*) Raingauge charges	169 2 3
(*f*) Economic collection... ...	145 0 6
Total	51,022 12 10

† This includes—

	Rs. a. p.
(*a*) Cost of Jaintia settlement	1,495 14 8
(*b*) Cost of Cachar settlement	54,227 9 4
(*c*) Cost of *ilám* settlement ...	24,021 14 3
Total	79,745 6 3

‡ This includes—

	Rs. a. p.
(*a*) Registrar kanungos...	6,862 4 1
(*b*) Assistant registrar kanungos	2,742 13 4
(*c*) Supervisor kanungos	20,096 4 7
(*d*) District mandals	1,03,711 12 9
(*e*) Chainmen and peons	1,384 15 5
(*f*) Temporary establishment	1,167 7 6
(*g*) Travelling allowance	874 10 0
(*h*) Compensation for dearness of food-grains	1,509 13 4
(*i*) Petty construction and repairs	62 4 0
(*j*) Cost and repair of instruments...	426 6 6
(*k*) Rewards...	775 10 2
(*l*) Map charges	98 0 7
(*m*) Office expenses and miscellaneous	1,795 4 6
Total	1,41,507 10 9

§ This includes—

	Rs. a. p.
(*a*) Registration of river-borne trade	3,375 1 10
(*b*) Provincial statistics (frontier trade)	1,079 0 7
Total	4,454 2 5

The increase under the head "Superintendence, etc.," is due mainly to (1) the appointment of an Assistant to the Director (2) the addition of one clerk and two chaprasis to this office establishment, (3) the entertainment of two temporary Sub-Deputy Collectors for a longer period than in the preceding year, (4) the starting of the experimental farm at Upper Shillong, (5) larger expenditure on account of breeding bulls, there having been 5 such bulls in the province during the year under report, against 2 only for a part of the previous year, and (6) increase in the charges for purchase and repairs of furniture owing to all articles of furniture in this office having been destroyed or damaged during the earthquake of the 12th June 1897.

The increase under the head "Settlement offices" is due to the *ilám* settlement office having been open throughout the year. In the previous year it was only open for three months. There has been a slight increase in the expenditure under the head "Kanungo establishment," due to the promotion of supervisor kanungos and mandals to fill vacancies in the higher grades.

A sum of Rs. 200 was drawn during the year for the construction of an office building for the traffic registration office at Bhairab Bazar, and this accounts for the increase of expenditure under the head "Registration of trade." Altogether there has been a total increase of expenditure amounting to about Rs. 18,000.

F. C. HENNIKER,

Offg. Director, Department of Land Records and Agriculture, Assam.

DATED SHILLONG :
The 12th July 1898.

APPENDICES.

APPENDIX A.

Diary Statement of Sub-Deputy Collectors for the year 1897-98.

Name of Sub-Deputy Collector.	District.	Subdivision.	Number of days in charge.	Number of days on tour.										Number of days at office work.	Number of days without work.						
				In cadastral mauzas.					In non-cadastral mauzas.						Travelling from place to place.	Gazetted holidays.	Sick.	Privilege leave.	Leave on half pay.	Leave without pay.	Total.
				Running check-lines.	Testing crops.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work, inspecting theodolite stations.	Testing measurements.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work.	Total.									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Babu Purna Chandra Mitra, Sub-Deputy Collector.	Sylhet ...	North Sylhet (Jaintia)	365	31	13	36	39	65	...	...	...	...	184	136	8	14	13	10(*a*)	...	...	45	
,, Tripura Charan Mukharji,	ditto ...	,, ...	Karimganj ...	216	22	5	6	7	21	...	...	4	6	71	90	13	31	11	...	...	...	55	
Munshi Faizuddin Ahmad,	ditto ...	Goalpara ...	Dhubri ...	365	96	8	70	2	84	1	3	...	42	306	4	...	13	8	34	...	...	55	
Babu Rajani Kanta Bardalai,	ditto ...	Kamrup ...	Barpeta ...	38	1	...	...	...	4	...	...	...	...	5	33	...	...	...	...	...	...	...	
,, Abhaya Sankar Guha,	ditto ...	,, ...	,, ...	327	62	13	23	...	60	...	2	...	...	160	107	10	12	7	31	...	...	60	
,, Bhola Nath Das,	ditto ...	,, ...	Gauhati ...	131	6	...	14	1	20	...	...	...	...	41	79	...	14	...	...	...	...	14	
,, Rajani Kanta Bardalai,	ditto ...	,, ...	,, ...	234	44	20	54	21	17	6	1	6	...	169	48	...	11	6	...	...	...	17	
,, Jajneswar Das Gupta,	ditto ...	Darrang ...	Mangaldai ...	365	58	5	59	1	41	...	...	...	11	175	148	...	26	6	10(*a*)	...	...	42	
,, Krishna Chandra Chaudhuri,	ditto ...	,, ...	Tezpur* ...	37	...	...	...	...	12	...	...	...	1	13	16	...	5	...	3(*a*)	...	...	8	
,, Bhola Nath Das,	ditto ...	,, ...	,, ...	228	30	1	13	1	9	2	3	2	49	110	85	...	33	...	...	...	...	33	
,, Radha Mohan Das,	ditto ...	Nowgong ...	Nowgong ...	365	58	9	41	6	65	2	2	...	2	185	132	2	18	12	16	...	...	48	
,, Raj Kumar Rai,	ditto ...	Sibsagar ...	Golaghat† ...	94	9	...	2	5	12	5	...	1	...	34	58	2	...	...	...	...	...	2	
,, Sarat Chandra Lahiri,	ditto ...	,, ...	,,‡ ...	246	56	18	8	9	20	4	1	...	...	116	96	10	14	2	8(*a*)	...	...	34	
,, Radhakanta Handiqui,	ditto ...	,, ...	Jorhat ...	365	60	3	4	13	92	8	...	...	...	180	145	...	30	10	...	...	...	40	
Munshi Didaruddin Ahmad,	ditto ...	,, ...	Sibsagar sadr§ ...	301	17	33	32	10	66	...	...	...	9	167	105	4	24	1	...	...	...	29	
Babu Ram Kumar Aditya,	ditto ...	Lakhimpur ...	North Lakhimpur‖ ...	32	13	...	...	...	...	...	...	...	7	20	11	...	1	...	...	...	...	1	
,, Hem Chandra Goswami,	ditto ...	,, ...	Dibrugarh¶ ...	333¶	37	7	8	8	36	...	...	13	34	143	131	6	39	4	10(*a*)	...	...	59	

(*a*) Casual leave.

* The subdivision was without a Sub-Deputy Collector for 100 days.

† ,, ,, ,, ,, ,, 25 ,,

‡ Exclusive of 23 days spent at the Tezpur theodolite training class.

§ The subdivision was without a Sub-Deputy Collector for 64 days.

‖ ,, ,, ,, ,, for the rest of the year.

¶ Exclusive of 32 days spent at the Tezpur theodolite training class.

APPENDIX B.

Diary Statement of Supervisor Kanungos and Surveyors for the year 1897-98.

Name of supervisor kanungo or surveyor.	Name of circle.	District.	Subdivision.	Number of days in charge.	Number of days on tour.										Number of days at office work.	Number of days without work.						
					In cadastral mauzas.					In non-cadastral mauzas.												
					Running check-lines.	Testing crops.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work, inspecting theodolite stations, etc.	Testing measurements.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work.	Total.		Travelling from place to place.	Gazetted holidays.	Sick.	Privilege leave.	Leave on half pay.	Leave without pay.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Binod Behari Chaudhuri ...	Hailakandi ...	Cachar ...	Hailakandi ...	365	10	47	44	12	19	...	...	...	...	132	180	23	14	16	...	...	...	53	
Gopi Charan De ...	Katigara (I) ...	,, ...	Sadr ...	365	33	36	11	8	43	...	...	...	...	131	148	43	39	13	...	...	...	86	
Kamini Kumar De ...	,, (II) ...	,, ...	,, ...	268	44	9	...	20	6	9	...	2	...	90	130	20	5	13	10	...	...	48	
Ditto ...	Chatlahaor ...	,, ...	,, ...	84	82	...	...	...	...	...	...	...	...	82	...	...	2	...	...	...	...	2	
Dinanath Ghosh ...	,, ...	,, ...	,, ...	279	1	46	...	5	32	...	...	...	...	84	168	8	14	3	2	...	...	27	
Shyama Charan Guha ...	Sadr (I) ...	,, ...	,, ...	328	65	...	11	53	17	2	...	1	...	149	117	25	9	9	...	19	...	62	
Shambhuram Das ...	,, (II) ...	,, ...	,, ...	365	9	46	31	13	15	...	...	...	...	114	203	11	20	17	...	...	...	48	
Sasi Kumar Kar ...	Circle No. I ...	Sylhet ...	North Sylhet ...	291	3	10	12	20	45	...	...	...	...	90	166	8	21	6	...	...	...	35	
Brajendra Kisor Das (offg.) ...	,, I ...	,, ...	,, ...	74	...	11	...	8	18	...	...	...	...	37	33	4	...	...	...	...	...	4	
Kamini Kumar De ...	,, II ...	,, ...	,, ...	104	...	7	14	...	4	...	...	...	...	25	54	4	3	18	...	...	...	25	
Hari Mohan Das (offg.) ...	,, II ...	,, ...	,, ...	31	...	...	...	...	...	...	...	...	...	...	30	...	1	...	...	...	...	1	
Kumudini Kanta Majumdar ...	,, II ...	,, ...	,, ...	230	12	35	38	17	16	...	...	...	...	118	108	4	...	...	...	...	...	4	

Abdus Sabur	...	...	,, III	...	,,	...	,,	...	365	56	51	22	23	15	...	...	...	...	167	189	...	5	4	...	...	...	9
Ambika Charan Banerji		...	,, IV	...	,,	...	,,	...	354	22	37	40	12	30	...	...	...	...	141	171	7	23	11	1	...	...	42
Rati Ram Das	...	...	Bijni	...	Goalpara	...	Dhubri	...	365	92	10	...	...	19	...	...	...	88	209	131	13	...	...	12	...	...	25
Joy Ram Deka	...	...	Bajali	...	Kamrup	...	Barpeta	...	304	90	...	15	17	27	...	...	...	...	149	135	17	3	...	...	...	...	20
Purnananda Das	...	...	,,	...	,,	...	,,	...	61	45	6	6	2	1	...	...	...	...	60	...	1	...	...	...	...	...	1
Ellias Ali	...	...	Barpeta	...	,,	...	,,	...	365	128	20	18	6	31	...	...	...	...	203	134	10	15	3	...	...	...	28
Bhagirath Deka	...	...	Roha	...	,,	...	,,	...	365	138	25	13	20	24	...	...	...	...	220	135	3	...	7	...	...	...	10
Nityananda	...	...	Beltala	...	,,	...	Gauhati	...	158	24	...	7	6	15	...	...	...	...	52	85	3	...	3	...	...	15	21
Birti Sen	...	...	,,	...	,,	...	,,	...	207	25	11	13	22	46	...	...	...	...	117	78	3	7	2	...	...	...	12
Konnath Deka	...	...	Palasbari	...	,,	...	,,	...	299	52	...	53	10	20	...	...	...	...	135	128	12	10	14	...	...	...	36
Chandi Ram	...	...	,,	...	,,	...	,,	...	25	...	...	3	...	5	...	...	...	...	8	17	...	...	...	...	...	...	...
Cheni Ram	...	...	,,	...	,,	...	,,	...	15	...	...	13	...	...	...	...	...	...	13	1	1	...	...	...	...	...	1
Mantan Ram Das	...	...	,,	...	,,	...	,,	...	26	8	...	1	1	3	...	...	...	...	13	10	1	...	2	...	...	...	3
Rangdeb Sarma	...	...	Boko	...	,,	...	,,	...	365	80	33	34	3	39	...	...	...	...	189	125	22	15	14	...	...	...	51
Bati Ram Das	...	...	Patidarrang	...	,,	...	,,	...	365	48	65	...	34	21	...	...	...	...	168	154	30	4	2	7	...	...	43
Jiu Ram	...	...	Hajo	...	,,	...	,,	...	365	34	30	5	48	83	...	...	...	...	200	135	5	3	22	...	...	...	30
Molan Chandra Bora		...	Barkhetri	...	,,	...	,,	...	315	90	8	2	36	37	...	...	...	...	173	127	8	7	...	...	...	...	15
Lakshmi Ram Das	...	...	,,	...	,,	...	,,	...	50	...	...	...	...	2	...	...	...	...	2	17	...	14	17	...	...	...	31
Tita Ram Gagai	...	...	Barigog	...	,,	...	,,	...	365	33	37	53	54	15	...	...	...	...	192	128	11	17	17	...	...	...	45
Cheni Ram	...	...	Panduri	...	,,	...	,,	...	236	34	27	11	54	2	...	...	...	...	128	87	5	16	...	...	...	...	21
Santi Ram Das	...	...	Nalbari	...	,,	...	,,	...	365	67	12	80	41	...	...	...	...	...	200	154	11	...	...	...	...	...	11
Jagat Ram Das	...	...	Tambulpur	...	,,	...	,,	...	365	138	15	...	5	46	6	...	...	...	210	141	4	...	3	...	...	7	14
Madhab Ram Datta	...	...	Baroma	...	,,	...	,,	...	365	63	39	30	7	29	...	...	...	22	190	120	6	...	7	...	...	42	55
Chandra Kanta Sarkar		...	Patharughat	...	Darrang	...	Mangaldai	...	365	80	26	18	19	47	...	...	...	...	190	140	10	15	3	7	...	...	35
Kalamani Das	...	...	Mangaldai	...	,,	...	,,	...	365	72	14	13	4	111	...	...	3	...	217	126	2	8	2	10	...	...	22
Rammal Das	...	...	Kalaigaon	...	,,	...	,,	...	365	106	24	...	6	59	...	...	...	...	195	145	...	18	7	...	...	...	25
Bahu Ram Das	...	...	Bengbari	...	,,	...	,,	...	238	52	1	...	5	27	...	...	...	...	85	131	...	22	...	...	...	...	22
Jagannath Deka	...	...	,,	...	,,	...	,,	...	127	57	...	...	...	57	...	...	...	...	114	11	...	...	2	...	...	...	2
Ganga Ram Das	...	..	Eastern circle	...	,,	...	Tezpur	...	184	43	3	13	2	83	...	...	...	...	144	27	...	11	2	...	...	...	13
Nandinath Sarma	...	...	,, ,,	...	,,	...	,,	...	181	17	...	57	1	13	...	...	...	...	88	74	2	11	6	...	...	...	19

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APPENDIX B—*continued.*

Name of supervisor kanungo or surveyor.	Name of circle.	District.	Subdivision.	Number of days in charge.	Number of days on tour.										Number of days at office work.	Number of days without work.							Remarks.
					In cadastral mauzas.					In non-cadastral mauzas.													
					Running check lines.	Testing crops.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work, inspecting theodolite stations, etc.	Testing measurements.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work.	Total.		Travelling from place to place.	Gazetted holidays.	Sick.	Privilege leave.	Leave on half pay.	Leave without pay.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Durga Ram Datta ...	Western circle ...	Darrang ...	Tezpur ...	4	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	
Manu Ram Talukdar ...	,, ,, ...	,, ...	,, ...	323	55	44	...	2	79	...	...	...	...	180	126	...	14	3	...	...	...	17	
Puaram Mahanta ...	Town ...	Nowgong ...	Nowgong ...	365	101	11	40	46	18	...	...	...	...	216	130	1	18	...	...	...	...	19	
Ramrath Datta ...	Silghat ...	,, ...	,, ...	238	57	20	50	12	30	...	...	...	...	169	43	4	1	21	...	...	...	26	
Govindaram Datta ...	,, ...	,, ...	,, ...	61	...	9	...	...	...	...	...	...	...	9	49	3	...	...	...	...	...	3	
Molan Chandra Bora ...	,, ...	,, ...	,, ...	40	...	...	14	17	4	...	...	...	...	35	5	...	...	...	...	...	...	...	
Taranath Bora ...	Doboka ...	,, ...	,, ...	320	54	18	21	15	121	3	4	...	...	236	67	16	1	...	...	...	...	17	
Govindaram Datta ...	,, ...	,, ...	,, ...	45	...	...	...	...	...	...	...	...	...	...	30	15	...	...	...	...	...	15	
Minaram Das ...	Roha ...	,, ...	,, ...	327	107	8	4	2	68	...	...	...	...	189	113	14	6	...	5	...	...	25	
Shibnath Sarma ...	,, ...	,, ...	,, ...	38	2	...	4	2	10	2	1	1	2	24	8	...	6	...	...	...	...	6	
Govindaram Datta ...	Dhing ...	,, ...	,, ...	259	84	8	10	5	127	...	...	...	...	234	23	2	...	...	...	...	...	2	
Umakanta Sarma ...	,, ...	,, ...	,, ...	106	...	...	...	1	5	...	...	...	...	6	90	...	10	...	...	...	...	10	
Surath Chandra Bora ...	Gerua ...	,, ...	,, ...	50	...	...	...	...	22	...	...	...	...	22	1	2	...	25	...	...	...	27	
Gopal Chandra Goswami ...	,, ...	,, ...	,, ...	125	...	...	18	...	...	...	...	...	...	18	94	...	13	...	...	...	...	13	

Umakanta Sarma	,, ...	,, ...	,, ...	156	61	7	29	1	20	...	...	...	...	118	25	4	...	9	...	...	...	13
Kalaram Bardalai	,, ...	,, ...	,, ...	5	...	...	...	...	...	...	...	...	...	...	3	2	...	...	...	...	...	2
Danpati Das	Ghugua ...	,, ...	,, ...	83	29	...	3	1	24	...	...	...	...	57	...	...	...	26	...	...	...	26
Umakanta Sarma	,, ...	,, ...	,, ...	27	...	...	...	...	17	...	...	...	...	17	...	6	....	4	...	...	...	10
Lakhiram Das	,, ...	,, ...	,, ...	220	30	17	2	2	61	...	...	...	...	112	90	6	12	...	...	...	...	18
Ramrath Datta	,, ...	,, ...	,, ...	35	4	4	2	2	14	...	...	...	...	26	7	...	2	...	...	...	...	2
Gajendra Narayan Das ...	Mayang ...	,, ...	,, ...	365	45	17	12	1	148	...	...	...	...	223	101	11	14	6	10	...	...	41
Manuram Talukdar	Northern circle ...	Sibsagar ...	Golaghat ...	39	21	...	...	...	10	...	...	...	...	31	8	...	...	...	...	...	...	...
Durgaram Datta	,, ,, ...	,, ...	,, ...	326	49	33	73	17	40	...	...	...	...	212	67	4	37	6	...	...	...	47
Bhakat Ram Datta	Southern ,, ...	,, ...	,, ...	365	99	14	18	22	43	...	...	...	...	196	153	...	3	13	...	...	...	16
Bhola Ram Datta	Eastern ,, ...	,, ...	Jorhat ...	298	62	27	8	11	85	...	...	...	...	193	102	1	1	1	...	...	...	3
Mahiram Das (junior) ...	,, ,, ...	,, ...	,, ...	67	...	...	...	...	5	...	...	...	...	5	45	2	1	...	14	...	...	17
Ditto (senior) ...	North-western circle,	,, ...	,, ...	365	49	17	29	35	58	4	...	...	...	192	153	...	14	6	...	...	...	20
Katiram Das	South-western circle.	,, ...	,, ...	204	19	...	...	17	65	...	...	...	...	101	84	5	6	8	...	...	...	19
Mahiram Das (junior) ...	,, ...	,, ...	,, ...	161	28	13	3	9	50	...	...	...	...	103	48	5	3	2	...	...	...	10
Minaram Das	Majuli ...	,, ...	,, ...	39	19	...	...	...	11	...	...	...	...	30	4	5	...	...	...	...	...	5
Shibnath Sarma	,, ...	,, ...	,, ...	326	100	15	18	3	46	...	...	...	...	182	128	9	4	3	...	...	...	16
Shib Ram Borah	Eastern circle ...	,, ...	Sadr ...	365	58	21	6	3	92	...	...	...	...	180	161	2	17	5	...	...	...	24
Govindanath Ray	Central ,, ...	,, ...	,, ...	335	64	35	7	15	41	...	...	...	18	180	123	...	14	...	18	...	...	32
Malbhog Gagai	,, ,, ...	,, ...	,, ...	18	8	...	...	...	5	...	...	...	...	13	5	...	...	...	...	...	...	...
Lalitram Chaudhuri	Western ,, ...	,, ...	,, ...	365	81	11	17	4	90	...	...	...	...	203	123	5	13	3	18	...	...	39
Sahabuddin Ahmed	North Lakhimpur	Lakhimpur ...	North Lakhimpur	207	48	14	19	2	8	3	2	4	3	103	56	4	15	2	...	...	27	48
Bhabiram Das	,, ...	,, ...	,, ...	158	62	15	27	3	20	2	1	2	1	133	19	4	2	...	...	...	...	6
Moheswar Das	Dibrugarh ...	,, ...	Dibrugarh ...	340	85	16	3	43	56	...	...	...	...	203	113	...	24	...	...	...	...	24
Baparam Das	,, ...	,, ...	,, ...	25	...	...	...	5	...	...	...	...	...	5	15	...	5	...	...	...	...	5
Lakshmi Kanta Das	Chabua ...	,, ...	,, ...	274	36	7	9	3	76	...	...	...	...	131	121	1	21	...	...	...	...	22
Janardan Sarma	,, ...	,, ...	,, ...	91	2	4	...	...	40	...	...	...	...	46	26	...	19	...	...	...	...	19
Samudra Narayan Das, surveyor	... ...	Kamrup ...	Gauhati ...	365	20	26	46	2	44	...	...	...	...	138	192	10	25	...	...	...	...	35
Mazaffar Ali, surveyor ...	... ...	Lakhimpur ...	Dibrugarh ...	243	...	...	...	...	...	121	...	...	11	132	90	2	17	2	...	...	...	21
Chandreswar Changkakati, offg. surveyor	... ...	,, ...	,, ...	122	...	...	...	...	...	42	...	...	...	42	60	12	5	...	3	...	...	20

APPENDIX C.

Work Statement of District and Subdivisional Officers for the year 1897-98.

PART I.—DEPUTY COMMISSIONERS.

Name of officer.	District.	Subdivision.	Area cadastrally surveyed.														Area not cadastrally surveyed.						Area of concealed cultivation discovered, in acres.	Area found wrongly classified.		
			Total number of supervisor kanungos.	Number of supervisor kanungos whose work was inspected.	Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		Total number of mandals.	Number of mandals or patwaris		Total area tested, as returned by mauzadars, in acres.	Total area as found on re-measurement, in acres.	Percentage of error in mauzadars' papers.		*Basti* shown as		
							Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katans*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit*.	*Faringati*.	*Rupit* shown as *faringati*.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Captain P. R. T. Gurdon ...	Kamrup ...	.....	14	...	...	271	21	1	1	12	24	0·86	53,312·34	0·01	...	...	29	5	...	...	...	...	...	...	...	...
Lieutenant-Colonel M. A. Gray, Deputy Commissioner.	Darrang ...	.....	6	3	12	115	22	7	18	233	295	9·82	14,874·35	0·42	...	...	24	...	...	...	...	...	...	...	...	...
C. G. M. Kennedy, Esq. ...	Nowgong ...	.....	8	4	5	155	43	3	8	48	90	2·12	44,420	0·03	...	...	11	...	...	...	...	...	...	...	...	...
F. C. Henniker, Esq., Deputy Commissioner.	Lakhimpur ...	.....	3	2	5	49	5	5	5	58	77	2·14	5,530	0·24	...	...	59	3	2	12·16	12·17	0·08	...	...	...	...

PART II.—SUBDIVISIONAL OFFICERS, ASSISTANT COMMISSIONERS, AND EXTRA ASSISTANT COMMISSIONERS.

Babu Chandra Kanta Sen, Extra Assistant Commissioner.	Sylhet ...	North Sylhet (Jaintia).	4	4	4	52	52	4	6	58	48	1·90	986·97	1·23	20	5	...	...	...	...	...	...	...	...	...	...
Rai Madhab Chandra Bardalai, Bahadur, Extra Assistant Commissioner.	Kamrup ...	Barpeta ...	3	...	6	61	7	6	6	76	78	3·76	19,103·42	0·13	...	...	9	5	5	181·77	179·59	1·20	...	...	...	...
R. C. Hamilton, Esq., Assistant Commissioner.	,, ...	Gauhati ...	11	...	3	210	2	2	6	64	103	2·99	34,208·92	0·05	315	214	20	...	...	...	...	...	5·34	·14	·2	...
Lieutenant A. Playfair, Subdivisional Officer.	Darrang ...	Mangaldai ...	4	3	9	81	40	5	10	90	88	4·92	9,613	0·33	...	...	3	1	...	...	...	...	...	...	...	...
B. C. Allen, Esq., Subdivisional Officer.	Sibsagar ...	Jorhat ...	4	4	7	73	54	6	8	105	95	4·39	7,664	0·37	...	...	4	2	2	17·08	16·44	3·74	...	...	...	...
Captain Herbert, Assistant Commissioner.	,, ...	Golaghat ...	2	...	4	52	4	4	4	65	110	1·90	7,718	0·15	...	...	3	...	...	...	...	...	...	...	...	...
F. E. Jackson, Esq., Assistant Commissioner.	,, ...	,, ...			2		2	2	2	17	18	0·59	7,718	0·04												
W. A. M. Duncan, Esq., Assistant Commissioner.	Lakhimpur ...	Dibrugarh ...	2	1	...	29	4	...	...	...	...	...	...	...	...	...	46	2	...	...	...	...	...	...	...	...

APPENDIX D.

Work Statement of Sub-Deputy Collectors for the year 1897-98.

Name of Sub-Deputy Collector.	District.	Subdivision.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area (in acres) of concealed cultivation discovered.	Area found wrongly classified.		
			Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		Total number of mandals or patwaris.	Number of mandals or patwaris		Total area (in acres) as returned by mauzadars.	Total area (in acres) as found on re-measurement.	Percentage of error in mauzadars' papers.		*Basti* shown as		
					Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katans*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Basti* shown as *faringati*, in acres.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Babu Tripura Charan Mukharji.	Sylhet ...	Karimganj ...	32	4	4	4	(*a*) 46	486	509	20·33	...	...	240	...	...	...	...	...	...	...	...	...	...	...
,, Purna Chandra Mitra.	,, ...	North Sylhet (Jaintia).	337	52	52	14	(*a*) 43	356	1,174	14·48	986·97	9·39	3,978	8,234	...	...	...	...	...	...	...	...	...	...
Munshi Faizuddin Ahmad	Goalpara...	Dhubri ...	72	22	22	22	(*a*) 65	501	1,524	35·02	7,876	8·21	...	...	11	2	1	2,422	2,181	9·95	...	...	...	...
							(*c*) 151	1,395	2,943	66·05														
Babu Rajani Kanta Bardalai.	Kamrup ...	Barpeta ...	1	61	...	1	(*a*) 1	17	27	0·62	19,103	0·02	...	...	9	...	...	...	...	...	...	...	...	...
,, Abhaya Sankar Guha.	,, ...	,, ...	74	61	61	60	(*a*) 69	837	1,397	42·34	19,103	1·42	263	289	9	6	...	...	...	...	...	...	4	164
							(*e*) 1	12	24	0·85														
,, Bhola Nath Das ...	,, ...	Gauhati ...	18	210	87	14	(*a*) 11	111	131	4·22	34,208·92	0·08	196	144	20	...	...	...	...	...	...	...	1	8
,, Rajani Kanta Bardalai.	,, ...	,, ...	91	210	203	80	(*a*) 69	1,212	1,243	45·34	34,208·92	0·85	1,634	2,222	20	14	5	263	275	4·56	72	...	21	171
							(*b*) ...	...	...	12·00														
							(*f*) ...	...	...	1·94														
Carried over	...	...	625	620	429	195	456	4,927	8,972	243·19	62,174·89	2·50	6,311	10,889	69	22	6	2,685	2,456	9·32	72	...	26	343

(*a*) Independent check-lines in cadastral area.
(*b*) Check-lines run over the lines of subordinate officers in cadastral area.
(*c*) Independent check-lines run in extension survey.
(*e*) With superior officers in cadastral area.
(*f*) Lines run in surveying waste land grants.

APPENDIX D—*continued.*

Name of Sub-Deputy Collector.	District.	Subdivision.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area (in acres) of concealed cultivation discovered.	Area found wrongly classified.		
			Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		Total number of mandals or patwaris.	Number of mandals or patwaris		Total area (in acres) as returned by mauzadars.	Total area (in acres) as found on re-measurement.	Percentage of error in mauzadar's papers.		*Basti* shown as	
					Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katans*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Basti* shown as *faringati*, in acres.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Brought forward ...	...	...	625	620	429	195	456	4,927	8,972	243·19	62,174·89	2·50	6,311	10,889	69	22	6	2,685	2,456	9·32	72	...	26	343
							(*a*) 73	754	1,196	32·32														
							(*b*) 5	37	53	2·25														
Babu Jajnesvar Das Gupta	Darrang ...	Mangaldai ...	111	81	81	54	(*c*) 12	92	186	5·22	9,612	2·49	1,779	1,771	3	3	...	...	...	...	...	...	...	...
							(*f*) 45	...	...	23·85														
							(*g*) 72	45	125	2·77														
„ Krishna Chandra Chaudhuri.	„ ...	Tezpur ...	...	34	2	1	...	...	...	...	5,261	...	...	...	21	...	...	...	...	...	...	...	...	...
							(*a*) 19	153	196	8·03														
„ Bhola Nath Das ...	„ ...	„ ...	43	34	32	20	(*c*) 41	462	514	16·55	5,261	2·99	208	307	21	17	2	62	73	17·74	...	...	...	...
							(*f*) ...	...	...	26·71														
							(*a*) 76	712	927	37·83														
							(*b*) 18	218	363	13·25														
„ Radha Mohan Das	Nowgong	Nowgong ...	174	155	155	89	(*c*) 9	77	113	3·53	44,420	0·59	982	754	11	8	3	...	...	...	197	...	...	...
							(*f*) 19	...	...	9·35														
							(*g*) 7	...	...	3·26														
							(*h*) 2	25	17	0·82														

„ Raj Kumar Rai ...	Sibsagar ...	Golaghat ...	8	52	12	9	(a) 10	72	123	4·50	7,718	0·49	74	870	3	1	1	375	589	57·06	207	...	...	...
							(c) 3	26	43	1·39														
							(f) 12	...	...	2·11														
„ Sarat Chandra Lahiri.	„ ...	„ ...	123	52	52	52	(a) 54	697	728	25·85	7,718	2·54	4,410	5,877	3	3	2	13·50	15	11·29	60	...	4·50	...
							(b) 3	40	42	1·86														
							(c) 10	74	83	4·82														
							(f) 19	...	...	7·25														
„ Radhakanta Handiqui.	„ ...	Jorhat ...	88	73	73	21	(a) 29	272	384	16·77	7,664	1·38	22	21	4	4	3	281	280	0·36	5·97	...	...	...
							(b) 5	79	100	3·67														
							(f) 15	...	...	6·50														
							(g) 104	...	...	28·95														
Munshi Didaruddin Ahmad.	„ ...	Sadr ...	33	69	69	14	(a) 33	84	127	5·95	7,126	0·91	12	750	2	...	...	...	...	...	3·96	...	...	...
							(c) 8	92	62	4·19														
							(f) 273	32	11	24·40														
							(g) 50	1	52	8·43														
Babu Ram Kumar Aditya	Lakhimpur	North Lakhimpur.	4	20	...	3	(a) 6	65	107	2·54	2,112	0·76	...	...	...	...	...	...	...	...	...	...	...	...
							(f) 15	1	33	5·41														
							(g) 40	10	45	5·50														
„ Hem Chandra Goswami.	„	Dibrugarh ...	32	29	27	27	(a) 40	342	717	14·24	3,418	2·66	1,351	792	59	14	...	...	...	...	16	...	3·60	...
							(e) 5	58	77	2·14														
							(f) 75	...	...	36·22														
							(g) 127	...	...	28·13														
Total	...	...	1,241	1,219	932	484	1,790	9,447	15,396	669·75	149,505·89	2·86	15,149	22,931	196	72	17	3,416·50	3,413	·1	561·93	...	34·10	343

(a) Independent check-lines in cadastral area.

(b) Check-lines run over the lines of subordinate officers in cadastral area.

(c) Independent check lines run in extension survey.

(e) With superior officers in cadastral area.

(f) Lines run in surveying waste land grants.

(g) Lines run in testing the demarcation of special estates.

(h) Check-lines run over the lines of subordinate officers in extension survey.

APPENDIX E.

Work Statement of Supervisor Kanungos and Surveyors for the year 1897-98.

Name of supervisor kanungo or surveyor.	Circle.	District.	Subdivision.	Area cadastrally surveyed.												
				Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Binod Behari Chaudhuri ...	Hailakandi ...	Cachar ...	Hailakandi ...	108	15	15	15	(a) 32	71	59	6·27	...	...	3,831	3,447	
Gopi Charan De ...	Katigara (I) ...	„ ...	Sadr ...	135	8	8	8	(a) 250	9	185	20·58	...	...	2,460	...	
Kamini Kumar De	„ (II) ...	„ ...	„ ...	8	8	...	3	(a) 182	99	149	15·46	...	...	57	76	
Ditto	Chatlahaor ...	„ ...	„ ...	17	10	...	...	(a) 120	...	74	10·47	...	...	...	...	
Dina Nath Ghosh	„ ...	„ ...	„ ...	106		...	10	(a) 1	1	4	0·15	...	...	2,265	10,192	
Shyama Charan Guha ...	Sadr (I) ...	„ ...	„ ...	57	12	7	12	(a) 229 (c) 29	27 ...	208 50	49·30 8·93	...	...	2,376	205	
Sambhuram Das	„ (II) ...	„ ...	„ ...	91	8	8	8	18	45	26	4·91	...	...	6,940	366	
Sasi Kumar Kar	Circle I ...	Sylhet ...	North Sylhet (Jaintia).	(a) 180 (c) ...	16	16	16	(a) 6 (c) 6	51 58	49 48	2·18 1·90	79	17·66 ...	2,370 ...	25,000 ...	
Brajendra Kisor Das (offg.) ...	„ I ...	„ ...	„	(a) 56				(a) ...	...	...	...		...	1,024	13,500	

Kamini Kumar De ...	...	„	II...	„	...	„	...	(a)	8	10	10	...	...	...	...	...	115·70	...	375	834
Kumudini Kanta Mazumdar	...	„	...	„	...	„	...	(a)	42		10	10	25	107	185	14·00		77·24	12,003	10,331
Abdus Sabur ...	...	„	III...	„	...	„	...	(a)	136	14	14	14	113	439	1,132	38·43	303·47	81·17	20,756	10,341
Ambika Charan Banerji	...	„	IV...	„	...	„	...	(a)	97	12	12	12	30	358	261	14·00	488·80	18·32	1,081	12,382
Rati Ram Das ...	...	Bijni	...	Goalpara	...	Dhubri	...	(a)	58	17	17	17	169	1,660	2,882	91·86	78·49	7·49	780	15,663
Munshi Ellias Ali ...	...	Barpeta	...	Kamrup	...	Barpeta	...	(a)	159	20	20	20	138	1,709	3,050	84·18	6,496·94	8·29	1,939	2,699
Bhagirath Deka ...	...	Roha	...	„	...	„	...	(a)	92	19	19	19	168	1,849	3,481	86·89	8,079·78	6·88	3,600	5,993
Joy Ram Deka ...	...	Bajali	...	„	...	„	...	(a)	121	22	22	22	99	1,039	1,457	50·60	4,526·70	11·37	2,909	3,038
Purnananda Das (offg.)	...	„	...	„	...	„	...	(a)	49		10	13	59	656	1,491	29·85			1,692	1,908
Mantan Ram Das ...	...	Palasbari	...	„	...	Gauhati		(a)	7	31	1	5	3	38	58	1·01	4,841·88	2·51	120	420·32
								(c)	3		...	3	3	57	69	2·28			...	...
Kannath Das ...	...	„	...	„	...	„		(a)	61		31	28	33	449	588	17·95			1,750	5,042·21
								(c)	„		...	...	1	18	20	0·47			...	...
Rangdev Sarma ...	...	Boko	...	„	...	„		(a)	104	28	25	25	74	900	1,024	51·35	7,485·70	4·39	11,882	44,438·02
								(c)	3		3	3	3	48	78	2·64			150	1,041 58
Nityananda ...	...	Beltala	...	„	...	„	...	(a)	...	13	13	13	22	204	239	9·98	1,759·70	10·12	502	513·93
Birti Sen (offg). ...	...	„	...	„	...	„	...	(a)	...		13	13	26	355	524	17·85			1,903	1,256·52
Bati Ram Das ...	...	Patidarrang	...	„	...	„		(a)	131	20	18	18	61	540	576	20·73	1,001·49	14·19	8,844	5,603·84
								(b)	9		2	2	4	37	48	1 49			515	2,431·07
Molan Chandra Bora	...	Barkhetri	...	„	...	„	...		104	17	17	17	168	1,742	2,755	65·83	5,565·95	7·56	761	522·31
Jiu Ram Das ...	...	Hajo	...	„	...	„	...	(a)	107	21	21	21	59	1,175	1,261	35·00	2,885·61	8·43	3,646	2,906·44
Kannath Das ...	...	„	...	„	...	„	...	(a)	46		...	17	5	92	96	3·00			4,362	3,430·51
Cheni Ram Das ...	...	Panduri	...	„	...	„	...	(a)	21	12	12	11	36	496	305	19·20	1,483·30	8·28	2,936	2,757·08
Tita Ram Das ...	...	Barigog	...	„	...	„	...	(a)	41	14	14	14	65	1 001	1,167	29·11	2,966 62	6·28	12,507	3,978·02
Santi Ram Das ...	...	Nalbari	...	„	...	„	...	(a)	7	19	19	19	31	378	405	12·80	902·66	9·07	12,580	973·80
Madhav Ram Gagai...	...	Baroma	...	„	...	„	...	(a)	27	18	18	18	61	453	533	27·22	2,713·56	6·42	1,528	984·26

APPENDIX E—*continued.*

Name of supervisor, kanungo or surveyor.	Circle.	District.	Subdivision.	Area cadastrally surveyed.												
				Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *kalans*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Jagat Ram Das	Tambulpur ...	Kamrup ...	Gauhati ...	(*a*) 67	17	17	17	62	489	896	27·82	2,602·45	6·84	1,363	1,571·40	
Chandra Kanta Sarkar ...	Patharughat (Sipajhar).	Darrang ...	Mangaldai	(*a*) 86 (*c*) ...	20	20	20	117 2	1,069 29	1,604 37	51·25 1·25	3,235·68	10·13	557 ...	464 ...	
Kalamani Das	Mangaldai ...	,, ...	,,	(*a*) 90 (*c*) ...	21	21	21	131 3	726 25	1,127 32	48·61 1·28	1,978·66	15·72	917 ...	2,925 ...	
Rammal Das	Kalaigaon ...	,, ...	,,	(*a*) 111 (*c*) ...	24	24	24	106 7	652 81	1,019 102	44·95 2·50	2,441·67	11·76	2,884 ...	1,495 ...	
Bahu Ram Das (offg.) ...	Bengbari ...	,, ...	,, ...	(*a*) 47	16	16	16	23	170	258	11·06	1,956·69	12·41	2,322	1,449	
Jagannath Deka	,, ...	,, ...	,,	(*a*) 64 (*b*) ... (*c*) ...	16	... 14 ...	... 14 ...	45 18 14	357 163 103	549 368 165	19·02 7·86 5·70			... ...	... ...	
Nandi Nath Sarma (offg.) ...	Eastern circle	,, ...	Tezpur ...	(*a*) 20	14	14	14	21	211	296	10·62	2,560·12	8·50	498	454·84	
Ganga Ram Das	,, ,, ...	,, ...	,, ...	(*a*) 41				54	598	707	26·08			958	985·54	

Durga Ram Datta	Western circle	,, ...	,, ...	...			...	...	...	...	...	...	...			...	...		
Manu Ram Talukdar ...	,, ,, ...	,, ...	,, ...	(a)	66	20	20	20	83	787	1,681	48·73	2,701·53	10·96		6,685	7,551		
Pua Ram Mahanta	Town ,, ...	Nowgong...	Nowgong ...	(a)	133	29	29	29	92	1,013	1,838	51·35	8,512·00	3·86		12,232	12,178		
Rama Nath Datta	Silghat ,, ...	,, ...	,, ...	(a)	81			20	79	964	1,557	39·75				3,251	3,963		
Govinda Ram Datta... ...	,, ,, ...	,, ...	,, ...	(a)	39	20	20	...	...	...	...	...	3,814·00	6·67		...	...		
Molan Chandra Borah	,, ,, ...	,, ...	,, ...	(a)	11			6	...	...	...	...				306	99		
Tara Nath Borah	Doboka ...	,, ...	,, ...	(a)	111	18	18	18	92	1,171	1,547	50·39	4,063·00	7·93		4,212	5,616		
Govinda Ram Datta... ...	,, ...	,, ...	,, ...		...		...	...	...	...	...	...				...	...		
Mina Ram Das	Roha ...	,, ...	,, ...	(a)	120	21	21	21	133	1,604	2,242	70·07	4,366·00	10·06		2,013	2,368		
Shib Nath Sarma	,, ...	,, ...	,, ...	(a)	2		2	2	5	76	34	1·73				...	...		
Govinda Ram Datta... ...	Dhing ...	,, ...	,, ...	(a)	82	22	22	22	138	1,757	3,235	78·39	9,994·00	5·02		2,546	2,789		
Umakanta Sarma	,, ...	,, ...	,, ...	(a)	...		22	...	...	...	...	...				...	...		
Surath Chandra Borah ...	Gerua ...	,, ...	,, ...		...		7	...	...	...	...	...				...	...		
Gopal Chandra Goswami ...	,, ...	,, ...	,, ...		...		17	...	...	...	...	...				...	...		
Umakanta Sarma	,, ...	,, ...	,, ...	(a)	67	17	17	17	81	828	1,251	54·31	5,978·00	5·81		...	...		
Kala Ram Bardalai	,, ...	,, ...	,, ...		...		...	...	...	...	...	...				...	...		
Danpati Das	Ghugua ...	,, ...	,, ...	(a)	48		18	18	86	930	1,549	44·88				133	87		
Umakanta Sarma	,, ...	,, ...	,, ...		...	18	...	...	...	...	...	...	5,453·00	7·93		...	...		
Lakhi Ram Das	,, ...	,, ...	,, ...	(a)	82		18	18	54	437	676	20·55				1,691	1,464		
Ram Rath Datta	,, ...	,, ...	,, ...	(a)	9		8	6	6	54	65	2·16				312	347		
Gajendra Narayan Das ...	Mayang ...	,, ...	,, ...	(a)	86	10	10	10	62	755	858	36·55	2,040·00	11·49		3,190	1,923		

APPENDIX E—*concluded.*

Name of supervisor kanungo or surveyor.	Circle.	District.	Subdivision.	Area cadastrally surveyed.												
				Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris: Whose papers were examined.	Number of mandals or patwaris: Whose field work was tested.	Testing by check-lines.						Testing without check lines.		
								Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Manu Ram Talukdar ...	Northern circle	Sibsagar ...	Golaghat ...	(*a*) 16		...	14	19	134	371	6·92			1,148	723·81	
				(*a*) 64		21	21	31	388	416	13·38			4,645	2,837·68	
Durga Ram Datta ...	„ „ ...	„ ...	„ ...	(*b*) 16	25	5	5	18	207	235	9·46	3,645·28	5·22	174	103·14	
				(*c*) 4		...	3	4	44	48	2·62			...	...	
				(*e*) 1		...	1	1	6	6	0·66			...	...	
Bhakat Ram Datta	Southern „ ...	„ ...	„ ...	(*a*) 67	21	21	21	87	763	1,059	35·61	2,311·73	9·85	3,141	4,461·15	
				(*c*) 9		...	...	3	168	269	6·65			825	403·96	
Bhola Ram Datta	Eastern „ ...	„ ...	Jorhat ...	(*a*) 39	19	19	19	50	419	772	21·34	1,535·00	12·06	622	695	
				(*b*) 7				12	132	225	7·59			55	31	
Mahi Ram Das (senior) ...	North-western circle.	„ ...	„ ...	(*a*) 32	23	19	19	58	520	1,424	26·79	1,982·00	9·81	322	185	
				(*b*) 8		4	4	8	84	157	3·61			77	108	
Kati Ram Das	South-western circle.	„ ...	„ ...	(*a*) 21	18	18	15	27	256	502	9·66	1,361·00	11·58	485	401	
				(*b*) 1		18	1	1	9	13	0·37			...	...	
Mahi Ram Das (junior) ...	„ ...	„ ...	.....	(*a*) 18		...	15	54	161	350	14·61			122	131	

Mina Ram Das ...	Majuli ...	„ ...	„ ...	(a) 9		9	9	38	367	700	17·06			278	122	* Includes 1,761 acres of the Ahatguri mauza in the Golaghat subdivision.
Sibnath Sarma	„ ...	„ ...	„ ...	(a) 93	19	19	19	189	1,775	2,953	74·53	4,547·00*	12·89	772	695	
				(c) 1		19	19	2	12	17	1·06			...	...	
Sib Ram Borah	Eastern circle ...	„ ...	Sadr ...	(a) 73	25	25	19	44	415	714	16·83	2,432·00	4·43	970	5,104·10	
Lalit Ram Chaudhuri ...	Western „ ...	„ ...	„ ...	(a) 93	24	24	24	99	760	1,355	40·44	2,217·02	11·69	12·141	12,782·02	
Govinda Nath Ray	Central „ ...	„ ...	„	(a) 25	20	20	20	28	270	310	11·20	2,477·04	8·51	601	72·40	
				(b) 68		20	20	30	319	374	19·28			853	127·48	
Malbhog Gogai	„ „ ...	„ ...	„ ...	(a) 4		4	4	8	25	42	2·49			7	11·07	
Shahabuddin Ahmed ...	Lakhimpur ...	Lakhimpur	North Lakhimpur	(a) 28	20	20	20	34	200	312	7·89	2,112·37	6·30	655	928·92	
Bhabi Ram Das (offg.) ...	„ ...	„ ...	„ ...	(a) 35				37	260	428	12·91			824	97·76	
Maheswar Das	Dibrugarh ...	„ ...	Dibrugarh ...	(a) 105	15	15	15	96	975	1,563	27·04	1,162·31	14·88	1,480	2,940	
				(c) 4		4	4	5	60	45	1·78			...	...	
Lakshmi Kanta Das	Chabua ...	„ ...	„ ...	(a) 88	14	14	14	49	274	525	21·59	2,255·86	6·61	532	1,331·98	
				(c) 11		...	...	21	163	439	7·58			...	...	
Janardan Sarma (offg.) ...	„ ...	„ ...	„ ...	(a) 2		14	14	4	37	59	1·70			...	...	
Samudra Narayan Das (surveyor)	.....	Kamrup ...	Gauhati ...	20	210	134	19	26	285	377	13·44	...	...	729	510	
Mazaffar Ali (surveyor) ...	.....	Lakhimpur...	Dibrugarh ...	...	...	...	...	...	...	...	...	...	...	...	...	

(a) Independent check-lines in cadastral area.

(b) „ „ „ extension survey.

(c) With superior officers in cadastral area.

(d) „ „ „ extension survey.

APPENDIX F

Work Statement of Tahsildars for the year 1897-98.

Name of tahsildar.	Name of tahsil.	District.	Subdivision.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area of concealed cultivation discovered, in acres.	Area (in acres) found wrongly classified.		
				Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris.		Testing by check-lines.						Testing without check-lines.		Total number of mandals.	Number of mandals or patwaris.		Total area as returned by mauzadars, in acres.	Total area as found on remeasurement, in acres.	Percentage of error in mauzadars' papers.		*Basti* shown as		
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested (in acres).		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Rupit* shown as *faringati* (acres).
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Hara Narayan Sen, naib tahsildar	Kanairghat	Sylhet	North Sylhet	1	16	16	1	2	28	4	0·50	79	4·05	135	42	...	...	...	...	...	...	...	...	...	...
Ratan Ali Sarkar, ditto	Sadr	,,	Dhubri	14	36	14	7	11	26	69	4·61	908	3·25	209	23	...	...	...	...	...	...	...	...	...	...
Niharan Chandra Mukerji, tahsildar	Bijni	Goalpara	Dhubri	3	13	13	3	3	19	38	0·92	7,876	0·07	4	285	3	3	...	...	...	...	...	...	...	...
Banga Chandra Chaudhuri ,,	Bajali	Kamrup	Barpeta	22	20	13	15	22	219	435	11·32	3,586·85	2·02	1,523	1,636·94	...	...	...	...	...	...	11·43	...	0·57	77·15
								(a)1	...	...	0·34	...													
Kesav Chandra Singh, ,,	Roha	,,	,,	9	17	17	9	33	261	513	14·01	6,956·49	1·29	712	297·05	...	...	...	...	...	...	...	3·38	0·72	2·52
Chini Ram Das, ,,	Gauhati	,,	Gauhati	6	13	5	4	10	215	101	5·66	1,159	2·06	80	388·40	5	1	3	2,024·15	2,024·49	0·02	...	...	...	...
Shyam Lal Chaudhuri, ,,	Palasbari	,,	,,	12	22	5	8	7	62	86	2·75	3,352·44	0·52	283	232·19	1	...	...	...	...	...	...	...	...	...
Muhammad Eunas Ali, ,,	Boko	,,	,,	8	28	8	8	8	134	99	6·19	7,485	0·53	...	...	7	1	1	358	358	...	...	...	...	...
Ratna Kanta Barua, ,,	Patidarrang	,,	,,	18	20	16	15	5	48	44	1·26	1,001	0·80	...	...	...	...	...	...	...	...	...	...	...	...
Radha Nath Barua, ,,	Hajo	,,	,,	25	38	38	15	40	493	429	22·29	8,451	1·68	349	949	...	...	...	...	...	...	32·84	...	...	10·01
Banshi Dhar Barua, ,,	Naibari	,,	,,	1	19	19	5	1	60	70	1·80	902·66	1·27	830	788	...	...	...	...	...	...	...	...	...	...
Jairam Bhuyan, ,,	Tambulpur	,,	,,	22	17	17	17	28	374	487	15·84	2,602	3·90	117	374	3	...	3	221	224	1·35	3·79	...	0·95	6·38
Ganga Ram Das, ,,	Barama	,,	,,	20	18	18	10	25	260	231	12·36	2,713	2·91	561	793	...	...	...	...	...	...	...	...	1·85	27·63
Kali Ram Chaudhuri, ,,	Chhaygaon	,,	,,	5	9	5	4	7	96	140	3·00	1,489	1·29	106	102	4	1	3	274	273	0·36	...	...	...	...
Uday Chandra Barua, ,,	Rangiya	,,	,,	23	26	26	26	24	340	247	13·76	4,430	1·98	701	1,304	...	...	...	...	...	...	...	...	...	...
Ghana Kanta Chaliha, ,,	Kalaigaon	Darrang	Mangaldai	10	24	24	10	10	87	86	3·51	2,441	0·92	...	...	...	...	...	...	...	...	...	...	...	...
Sita Nath Saharia, ,,	Mangaldai	,,	,,	10	12	12	8	12	95	74	1·30	1,470	0·57	529	590	3	3	3	213	211	0·94	...	...	...	...
Ravi Charan Sarma, ,,	Tezpur	,,	Tezpur	24	10	15	8	22	174	380	12·10	1,655	4·68	112	302	5	5	2	314	320	1·91	...	...	...	...
Ganga Nath Sarma, ,,	Chutia	,,	,,	7	12	12	4	7	99	132	3·79	2,369	1·02	...	...	4	4	...	...	...	...	...	...	...	...
Gunahash Goswami, ,,	Roha	Nowgong	Nowgong	8	21	13	8	8	96	285	6·00	4,896·52	0·84	85	192	5	2	2	1	...	...	...	...	...	...
Chandra Kanta Barua, ,,	Samaguri	,,	,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phedela Ram Das, ,, (Offg.)	,,	,,	,,	4	12	4	4	2	17	54	0·53	4,247·60	0·08	46	12	...	...	...	...	...	...	...	...	...	...
Santi Ram Hazarika, ,,	Sadr	,,	,,	16	10	...	6	...	...	...	...	3,752·39	...	402	339·17	...	...	...	...	...	...	...	...	...	...
Danda Dhar Barua, ,,	Golaghat	Sibsagar	Golaghat	6	14	14	6	5	39	86	1·88	1,820	0·66	45	75	4	4	2	17·64	17·93	1·63	...	...	1·09	0·02
Guru Prasad Kakati, ,,	Athgaon	,,	,,	3	12	12	2	4	36	75	2·29	991	1·47	...	...	3	3	...	...	...	...	...	...	...	...
Bistu Ram Barua, ,,	Jorhat	,,	Jorhat	6	18	4	4	8	87	86	2·24	970	1·47	...	...	...	...	...	...	...	...	...	...	...	...
Someswar Sarma Barua, ,,	Namtidal	,,	Sadr	5	24	...	3	5	67	73	3·28	2,217	0·94	100	100	...	...	...	...	...	...	...	...	...	...
Durga Prosad Datta Barua, ,,	Sibsagar	,,	,,	12	16	...	12	13	99	46	6·63	1,194	3·55	...	...	...	...	...	9·58	12·50	2·92	...	...	...	...
Padma Nath Barua, ,,	Dibrugarh	Lakhimpur	Dibrugarh	...	15	15	...	...	...	...	...	...	...	...	...	4	4	4	55	70	27·27	5	...	...	...
Total	....	....	....	290	512	355	222	323	3,531	4,370	160·16	81,634·95	1·25	6,919	8,824·75	51	31	23	3,487·37	3,510·92	0·67	53·06	3·38	5·18	113·71

(a) Examining boundary marks of *nisf-khiraj* estates.

APPENDIX G.

Work Statement of Mauzadars and Tahsil Muharrirs for the year 1897-98.

District.	Subdivision.	Total number of mauzadars and muharrirs who did any testing.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area (in acres) of concealed cultivation discovered.	Area (in acres) found wrongly classified.			Remarks.
			Number of villages tested.	Total number of mandals.	Number of mandals		Testing by check-lines.						Testing without check-lines.		Total number of mandals.	Number of mandals		Total area (in acres) as returned by mauzadars.	Total area (in acres) found on remeasurement.	Percentage of error in mauzadar's papers.		*Basti* shown as			
					Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katans*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Rupit* shown as *faringati* (acres.)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Goalpara	Dhubri ...	...	...	...	13	...	...	...	...	...	...	..	...	...	3	3	...	...	...	...	...	...	...	...	
Kamrup	Gauhati ...	1	3	4	4	3	3	43	72	1·86	1,076	1·11	67	100	1	1	1	...	...	...	...	...	...	...	
,, ...	Barpeta ...	7	42	24	19	17	57	530	933	30·02	12,646·94	1·51	743	319·66	9	8	9	1,995·83	1,966·21	1·48	...	...	...	2·22	
Darrang	Tezpur ...	1	4	2	2	2	4	89	101	2·43	184·6	8·42	...	...	8	8	6	665·5	735·15	10·40	12·42	...	...	...	
,, ...	Mangaldai ...	9	53	34	28	22	66	477	721	29·03	2,065·07	8·99	1,079	3,516	15	15	11	411·567	404·56	1·70	4	11	...	...	
Nowgong	Nowgong ...	11	47	75	41	30	24	205	389	9·27	22,581	0·26	1,205	1,187·15	9	7	7	65·51	68·90	12	1·55	...	...	...	
Sibsagar	Sadr	2	6	11	2	6	8	75	98	4·65	661	4·27	22	11	...	...	...	...	...	...	...	...	...	...	
,, ...	Jorhat ...	9	49	39	21	15	28	215	393	11·88	2,150	3·53	523	586	4	3	2	553	591	6·87	16·85	...	...	...	
,, ...	Golaghat ...	4	12	17	11	9	9	37	105	3·01	805	2·40	233	171	6	6	5	172	187	8·72	4·33	...	...	...	
Lakhimpur	Dibrugarh ...	2	3	3	3	...	...	...	...	...	...	...	128	321·81	3	2	2	1,432·72	1,282·76	10·46	...	...	...	...	
,, ...	North Lakhimpur...	6	14	33	3	8	8	59	140	2·81	762	2·36	117	14	13	3	4	164·60	163·90	0·42	...	...	...	...	
Total	...	52	233	242	147	112	207	1,730	2,952	94·96	42,931·61	1·41	4,117	6,226·52	71	56	47	5,460·727	5,399·407	0·01	39·15	11	...	2·2.	

APPENDIX H.

Statement showing the condition of Survey Marks on the 30th June 1897.

Subdivision.	Classification.	Total number (columns 6+7+8).	Total number found in good order by mandals or patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order on 30th June 1897.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Barpeta ...	(*a*) Trijunction prisms	979	916	52	10	968	1
	(*b*) Traverse stations shown by mounds and *simul* boughs	5,691	2,168	3,105	369	5,273	49
	(*c*) Kanungo's mounds, including jungle mounds	1,294	664	606	24	1,270	...
	(*d*) Prisms on boundaries of grants, etc. ...	267	267	...	...	267	...
	(*e*) Concrete blocks ditto ...	877	877	...	...	877	...
	(*f*) Country stones ditto ...	1,534	1,534	...	...	1,534	...
	(*g*) Mounds ditto ...	228	200	28	...	228	...
	Total Barpeta	10,870	6,626	3,791	403	10,417	50
Gauhati ...	(*a*) Trijunction prisms	2,956	2,881	26	...	2,907	49
	(*b*) Traverse stations shown by mounds and *simul* boughs	5,355	2,265	2,113	706	4,378	271
	(*c*) Kanungo's mounds, including jungle mounds	4,689	2,275	1,506	837	3,781	71
	(*d*) Prisms on boundaries of grants, etc. ...	3,111	3,061	35	15	3,096	...
	(*e*) Concrete blocks ditto ...	6,649	6,555	88	6	6,643	...
	(*f*) Country stones ditto ...	6,093	6,091	...	...	6,091	2
	(*g*) Mounds ditto ...	1,096	998	61	18	1,059	19
	Total Gauhati	29,949	24,126	3,829	1,582	27,955	412
Mangaldai ...	(*a*) Trijunction prisms	1,511	1,497	...	...	1,497	14
	(*b*) Traverse stations shown by mounds and *simul* boughs	6,757	3,727	2,462	381	6,189	187
	(*c*) Kanungo's mounds, including jungle mounds	153	127	26	...	153	...
	(*d*) Prisms on boundaries of grants, etc. ...	302	302	...	...	302	...
	(*e*) Concrete blocks ditto ...	352	352	...	...	352	...
	(*f*) Country stones ditto ...	387	387	...	...	387	...
	(*g*) Mounds ditto ...	421	353	18	50	371	...
	Total Mangaldai	9,883	6,745	2,506	431	9,251	201
Tezpur ...	(*a*) Trijunction prisms	389	254	107	23	361	5
	(*b*) Traverse stations shown by mounds and *simul* boughs	2,520	1,117	1,268	81	2,385	54
	(*c*) Kanungo's mounds, including jungle mounds	203	80	95	25	175	3
	(*d*) Prisms on boundaries of grants, etc. ...	61	61	...	...	61	...
	(*e*) Concrete blocks ditto ...	1,172	1,157	...	15	1,157	...
	(*f*) Country stones ditto ...	...	...	...	...	...	...
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total Tezpur	4,345	2,669	1,470	144	4,139	62

APPENDIX H—*continued.*

Subdivision.	Classification.	Total number (columns 6+7+8).	Total number found in good order by mandals or patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order on 30th June 1897.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Nowgong ...	(*a*) Trijunction prisms	2,221	1,944	248	29	2,192	...
	(*b*) Traverse stations shown by mounds and *simul* boughs	13,218	6,192	6,064	827	12,256	135
	(*c*) Kanungo's mounds, including jungle mounds	417	247	145	16	392	9
	(*d*) Prisms on boundaries of grants, etc. ...	544	527	17	...	544	...
	(*e*) Concrete blocks ditto ...	249	198	51	...	249	...
	(*f*) Country stones ditto ...	217	217	...	...	217	...
	(*g*) Mounds ditto ...	815	594	30	191	624	...
	Total Nowgong	17,681	9,919	6,551	1,063	16,474	144
Golaghat ...	(*a*) Trijunction prisms	552	543	...	9	543	...
	(*b*) Traverse stations shown by mounds and *simul* boughs	5,903	2,770	1,707	1,142	4,477	284
	(*c*) Kanungo's mounds, including jungle mounds	217	155	59	3	214	...
	(*d*) Prisms on boundaries of grants, etc. ...	266	266	...	...	266	...
	(*e*) Concrete blocks ditto ...	952	952	...	...	952	...
	(*f*) Country stones ditto ...	78	78	...	...	78	...
	(*g*) Mounds ditto ...	92	92	...	...	92	...
	Total Golaghat	8,060	4,856	1,766	1,154	6,622	284
Jorhat ...	(*a*) Trijunction prisms	1,059	1,052	...	4	1,052	3
	(*b*) Traverse stations shown by mounds and *simul* boughs	10,826	3,793	4,164	1,853	7,957	1,016
	(*c*) Kanungo's mounds, including jungle mounds	331	168	146	17	314	...
	(*d*) Prisms on boundaries of grants, etc. ...	827	827	...	...	827	...
	(*e*) Concrete blocks ditto ...	2,404	2,404	...	...	2,404	...
	(*f*) Country stones ditto ...	...	...	...	...	...	...
	(*g*) Mounds ditto ...	27	27	...	...	27	...
	Total Jorhat	15,474	8,271	4,310	1,874	12,581	1,019
Sibsagar ...	(*a*) Trijunction prisms	1,022	1,003	...	11	1,003	8
	(*b*) Traverse stations shown by mounds and *simul* boughs	11,953	4,947	3,625	2,214	8,572	1,167
	(*c*) Kanungo's mounds, including jungle mounds	136	68	58	10	126	...
	(*d*) Prisms on boundaries of grants, etc. ...	850	850	...	...	850	...
	(*e*) Concrete blocks ditto ...	1,018	1,018	...	...	1,018	...
	(*f*) Country stones ditto ...	...	...	...	...	...	...
	(*g*) Mounds ditto ...	50	50	...	...	50	...
	Total Sibsagar Sadr	15,029	7,936	3,683	2,235	11,619	1,175

APPENDIX H—*continued.*

Subdivision.	Classification.	Total number (columns 6+7+8.)	Total number found in good order by mandals or patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order on 30th June 1897.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Dibrugarh ...	(*a*) Trijunction prisms	384	293	80	10	373	1
	(*b*) Traverse stations shown by mounds and *simul* boughs	2,950	1,315	1,186	426	2,501	23
	(*c*) Kanungo's mounds, including jungle mounds	523	235	285	3	520	...
	(*d*) Prisms on boundaries of grants, etc. ...	232	228	...	4	228	...
	(*e*) Concrete blocks ditto ...	859	806	...	53	806	...
	(*f*) Country stones ditto ...	...	...	...	...	...	...
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total Dibrugarh	4,948	2,877	1,551	496	4,428	24
North Lakhimpur.	(*a*) Trijunction prisms	191	191	...	...	191	...
	(*b*) Traverse stations shown by mounds and *simul* boughs	1,551	899	454	195	1,353	3
	(*c*) Kanungo's mounds, including jungle mounds	116	38	11	67	49	...
	(*d*) Prisms on boundaries of grants, etc. ...	4	...	...	4	...	...
	(*e*) Concrete blocks ditto ...	239	...	159	80	159	...
	(*f*) Country stones ditto ...	63	63	...	...	63	...
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total North Lakhimpur ...	2,164	1,191	624	346	1,815	3
Karimganj ...	(*a*) Trijunction prisms	100	99	...	...	99	1
	(*b*) Traverse stations shown by mounds and *simul* boughs	1,964	928	434	581	1,362	21
	(*d*) Prisms on boundaries of grants, etc. ...	124	103	4	17	107	...
	(*e*) Brick pillars ditto ...	152	44	...	10	44	98
	(*f*) Country stones ditto ...	97	29	...	68	29	...
	(*f*) Pipes ditto ...	52	22	8	22	30	...
	(*g*) Mounds ditto ...	2,215	893	22	1,238	915	62
	Total Karimganj	4,704	2,118	468	1,936	2,586	182

APPENDIX H—*concluded.*

Subdivision.	Classification.	Total number (columns 6+7 8).	Total number found in good order by mandals or patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order on 30th June 1897.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
North Sylhet (Jaintia).	(*a*) Trijunction prisms	685	609	1	6	610	69
	(*b*) Traverse stations shown by mounds and *simul* boughs	359	30	...	...	30	329
	(*c*) Kanungo's mounds, including jungle mounds	25	25	...	...	25	...
	(*d*) Prisms on boundaries of grants, etc. ...	185	172	...	2	172	11
	(*e*) Brick pillars ditto ...	479	432	...	22	432	25
	(*f*) Country stones ditto ...	10,618	9,211	53	185	9,264	1,169
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total Jaintia	12,351	10,479	54	213	10,533	1,603
Goalpara ...	(*a*) Trijunction prisms	205	205	...	...	205	...
	(*b*) Traverse stations shown by mounds and *simul* boughs	1,304	1,185	119	...	1,304	...
	(*c*) Kanungo's mounds, including jungle mounds	...	...	...	...	...	...
	(*d*) Prisms on boundaries of grants, etc. ...	...	...	...	...	...	...
	(*e*) Concrete blocks ditto ...	...	...	...	...	...	...
	(*f*) Country stones ditto ...	...	...	...	...	...	...
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total Goalpara	1,509	1,390	119	...	1,509	...
Total ...	(*a*) Trijunction prisms	12,254	11,487	514	102	12,001	151
	(*b*) Traverse stations shown by mounds and *simul* boughs	70,351	31,336	26,701	8,775	58,037	3,539
	(*c*) Kanungo's mounds, including jungle mounds	8,104	4,082	2,937	1,002	7,019	83
	(*d*) Prisms on boundaries of grants, etc. ...	6,773	6,664	56	42	6,720	11
	(*e*) Concrete blocks ditto ...	15,402	14,795	298	186	15,093	123
	(*f*) Country stones ditto ...	19,139	17,632	61	275	17,693	1,171
	(*g*) Mounds ditto ...	4,944	3,207	159	1,497	3,366	81
	Grand total	136,967	89,203	30,726	11,879	119,929	5,159

APPENDIX I.

Statement showing Advances and Recoveries on account of Cadastral Survey Operations during 1897-98.

District.	Classification of advances.	Outstanding on the 31st March 1897.	Advances made during 1897-98.	Total for recovery up to 31st March 1898.	Recovered during the year 1897-98.	Balance outstanding on the 31st March 1898.
1	2	3	4	5	6	7
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Cachar.	(1) Advances recoverable from landholders in the areas surveyed by the professional party.	41,228 7 11	19,761 9 11	60,990 1 10	...	60,990 1 10
	(3) Advances for demarcation of grants, permanently-settled, *lakhiraj*, and *nisf-khiraj* estates—					
	(*c*) Pay, etc., of demarcation establishment.	...	4,247 8 4	4,247 8 4	...	4,247 8 4
	Total	41,228 7 11	24,009 2 3	65,237 10 2	...	65,237 10 2
Sylhet.	Pratabgarh—					
	(1) Advances recoverable from landholders in the areas surveyed by the professional party.	100 0 9	...	100 0 9	0 0 9	100 0 0
	(3) Advances for demarcation of grants, permanently-settled, *lakhiraj*, and *nisf-khiraj* estates—					
	(*a*) Country stones ...	...	2,042 3 0	2,042 3 0	...	2,042 3 0
	(*b*) Prisms	...	1,085 0 0	1,085 0 0	...	1,085 0 0
	(*c*) Pay, etc., of demarcation establishment.	...	220 7 6	220 7 6	...	220 7 6
	Jaintia—					
	(1) Advances recoverable from landholders in the areas surveyed by the professional party.	521 3 2	...	521 3 2	175 11 7	345 7 7
	(3) Advances for demarcation of grants, permanently-settled, *lakhiraj*, and *nisf-khiraj* estates—					
	(*b*) Prisms	114 2 8	...	114 2 8	7 4 9	106 13 11
	(*c*) Pay, etc., of demarcation establishment.					
	Ilám—					
	(1) Advances recoverable from landholders in the areas surveyed by the professional party.	*1,450 0 0	9,493 1 7	10,943 1 7	...	10,943 1 7
	(3) Advances for demarcation of grants, permanently-settled, *lakhiraj*, and *nisf-khiraj* estates—					
	(*a*) Country stones ...	...	1,432 11 0	1,432 11 0	...	1,432 11 0
	Total	2,185 6 7	14,273 7 1	16,458 13 8	183 1 1	16,175 12 7
Goalpara.	(1) Advances recoverable from landholders in the areas surveyed by the professional party.	127 8 0	...	127 8 0	127 8 0	...
	(2) Advances recoverable from landholders in the areas surveyed by local agency.	1,674 13 0	802 11 0	2,477 8 0	...	2,477 8 0
	Total	1,802 5 0	802 11 0	2,605 0 0	127 8 0	2,477 8 0

* This amount, which was spent by the Superintendent of Survey during the year 1896-97, was shown in the Report for that year under the head (2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency," now transferred to this head.

APPENDIX I—*continued.*

District.	Classification of advances.	Outstanding on 31st March 1897.	Advances made during 1897-98.	Total for recovery up to 31st March 1898.	Recovered during the year 1897-98.	Balance outstanding on the 31st March 1898.
1	2	3	4	5	6	7
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Kamrup.	(1) Advances recoverable from landholders in the areas surveyed by the professional party.	345 9 6	*4 5 0	349 14 6	...	349 14 6
	(2) Advances recoverable from landholders in the areas surveyed by local agency.	5,483 2 0	93 7 0	5,576 9 0	64 6 8	5,512 2 4
	(3) Advances for demarcation of grants, permanently-settled, *lakhiraj*, and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	33,792 10 3	7 0 0	33,799 10 3	2,492 5 1	31,307 5 2
	(*b*) Prisms					
	(*c*) Pay, etc., of demarcation establishment.	1,311 11 8	86 5 0	1,398 0 8	109 9 8	1,288 7 0
	Total	40,933 1 5	191 1 0	41,124 2 5	2,666 5 5	38,457 13 0
Darrang.	(1) Advances recoverable from landholders in the areas surveyed by the professional party.	195 15 2	†88 0 0	283 15 2	75 4 0	207 11 2
	(2) Advances recoverable from landholders in the areas surveyed by local agency.	277 7 11	24 0 0	301 7 11	...	301 7 11
	(3) Advances for demarcation of grants, permanently-settled, *lakhiraj*, and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	6,684 1 9	79 13 0	6,763 14 9	...	6,763 14 9
	(*b*) Prisms	2,496 14 9	351 2 0	2,848 0 9	...	2,848 0 9
	(*c*) Pay, etc., of demarcation establishment.	977 2 5	102 6 4	1,079 8 9	...	1,079 8 9
	Total	10,631 10 0	645 5 4	11,276 15 4	75 4 0	11,201 11 4
Nowgong.	(1) Advances recoverable from landholders in the areas surveyed by the professional party.	499 5 9	‡87 0 9	586 6 6	...	586 6 6
	(2) Advances recoverable from landholders in the areas surveyed by local agency.	1,012 5 0	66 0 0	1,078 5 0	...	1,078 5 0
	(3) Advances for the demarcation of grants, permanently-settled, *la-khiraj*, and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	722 12 9	7 8 0	730 4 9	...	730 4 9
	(*b*) Prisms	741 4 9	12 0 0	753 4 9	...	753 4 9
	(*c*) Pay, etc., of demarcation establishment.	337 5 5	84 0 0	421 5 5	...	421 5 5
	Total	3,313 1 8	256 8 9	3,569 10 5	...	3,569 10 5

* The whole sum represents advances on account of demarcation of the theodolite stations in the Barpeta town.

† Represents advances on account of demarcation of the theodolite stations in the Tezpur town.

‡ Represents advances on account of demarcation of the theodolite stations in the Nowgong town.

APPENDIX I—*concluded.*

District.	Classification of advances.	Outstanding on 31st March 1897.	Advances made during 1897-98.	Total for recovery up to 31st March 1898.	Recovered during the year 1897-98.	Balance outstanding on the 31st March 1898.
1	2	3	4	5	6	7
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Sibsagar.	(1) Advances recoverable from landholders in the areas surveyed by the professional party.	183 1 9	*44 8 9	227 10 6	0 9 0	227 1 6
	(2) Advances recoverable from landholders in the areas surveyed by local agency.	1,893 4 0	319 2 0	2,212 6 0	42 6 10	2,169 15 2
	(3) Advances for demarcation of grants, permanently-settled, *lakhiraj*, and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	8,575 5 5	40 4 0	8,615 9 5	...	8,615 9 5
	(*b*) Prisms	12,577 12 7	48 0 0	12,625 12 7	...	12,625 12 7
	(*c*) Pay, etc., of demarcation establishment.	3,309 3 0	1,239 13 3	4,549 0 3	...	4,549 0 3
	Total	26,538 10 9	1,691 12 0	28,230 6 9	42 15 10	28,187 6 11
Lakhimpur.	(1) Advances recoverable from landholders in the areas surveyed by the professional party.	91 2 0	...	91 2 0	77 4 0	13 14 0
	(2) Advances recoverable from landholders in the areas surveyed by local agency.	10 8 0	241 6 0	251 14 0	...	251 14 0
	(3) Advances for demarcation of grants, permanently-settled, *lakhiraj*, and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	2,595 0 3	20 0 0	2,615 0 3	1,501 7 9	1,113 8 6
	(*b*) Prisms	511 13 6	3 12 0	515 9 6	353 9 3	162 0 3
	(*c*) Pay, etc., of demarcation establishment.	51 6 1	289 8 10	340 14 11	203 2 7	137 12 4
	Total	3,259 13 10	554 10 10	3,814 8 8	2,135 7 7	1,679 1 1
Total.	(1) Advances recoverable from landholders in the areas surveyed by the professional party.	44,742 6 0	29,478 10 0	74,221 0 0	456 5 4	73,764 10 8
	(2) Advances recoverable from landholders in the areas surveyed by local agency.	10,351 7 11	1,546 10 0	11,898 1 11	106 13 6	11,791 4 5
	(3) Advances for demarcation of grants, permanently-settled, *lakhiraj*, and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...					
	(*b*) Prisms	74,798 11 3	11,399 6 3	86,198 1 6	4,667 7 1	81,530 10 5
	(*c*) Pay, etc., of demarcation establishment.					
	Grand total	1,29,892 9 2	42,424 10 3	1,72,317 3 5	5,230 9 11	1,67,086 9 6

* Of this, Rs. 17-7 and Rs. 26-1-9 represent advances on account of demarcation of the theodolite stations in the Sibsagar and Jorhat towns respectively.

APPENDIX J.

List of Papers communicated to the Agricultural Ledger during the year 1897-98.

Subject.	Description of papers.
1	2
Solanum Indicum—Titbhekuri ...	A descriptive note by Deputy Commissioner, Kamrup.
Ditto	Ditto „ Deputy Commissioner, Sibsagar.
Ditto	Ditto „ Subdivisional Officer, Goalpara.
Ditto	Ditto „ Sub-Deputy Collector of Dibrugarh.
Ditto	Ditto on the uses of the plant by Deputy Commissioner, Nowgong.
Perilla Ocimoides—Khasi Unai ...	Ditto by Deputy Commissioner, Garo Hills.
Ditto	Ditto „ Sub-Deputy Collector, Jorhat.
Ditto	Ditto „ Deputy Commissioner, Sibsagar.
Bixa Orellana or Arnotto (Assamese Jarath or Jalandhar).	Ditto „ Deputy Commissioner, Nowgong.
Coix lachryma (Job's-tears) ...	A note by Political Agent in Manipur and Superintendent of the State.
Ditto	Ditto „ Deputy Commissioner, Naga Hills.
Maesa Indica	Ditto „ Sub-Deputy Collector of Dibrugarh.
Marsdonia tinctoria	Ditto „ Deputy Commissioner, Nowgong.
Piper nigrum	Ditto „ Mr. Basu on its cultivation in Assam (Bulletin No. 4 of 1898).

ASSAM SECRETARIAT PRINTING OFFICE (REV.) NO. 196—340—28-9-98.

Resolution on the Report of the Department of Land Records and Agriculture, Assam, for 1897-98.

Extract from the Proceedings of the Chief Commissioner of Assam in the General Department, No. 5080R., dated Shillong, the 27th October 1898.

Read—

The Annual Report of the Director of Land Records and Agriculture, Assam, for 1897-98.

RESOLUTION.

THE Report is submitted by Mr. Henniker, the Officiating Director, who took charge after the year had drawn to a close. Mr. Monahan was in charge of the Department throughout the year, and conducted his duties to the Chief Commissioner's entire satisfaction.

2. Mr. Monahan was on tour for 160 days during the year, and his Assistant, Mr. Basu, out of the 188 days, for which he held charge of his office, spent 115 days on tour. The Superintendent, Mr. O'Donel, was on tour for 270 days.

The amount of touring done by Sub-Deputy Collectors was also generally satisfactory, and only two officers, Babu Hem Chandra Goswami and Babu Tripura Charan Mukharji, failed in this respect.

The Chief Commissioner observes that the majority of the Supervisor Kanungos of the province still fail to spend the prescribed minimum of 200 days on tour, and that in only 22 out of 51 circles was this standard reached. He hopes that in the present year special measures will be taken by District Officers to ensure improvement.

3. The information furnished in paragraph 8 of the Director's report regarding the working of the three survey schools of the province, is a disappointing record. In view of the effect of the earthquake and floods in Kamrup, the Chief Commissioner is not disposed to attach importance to the diminution in the number of pupils who received certificates in the Gauhati School, but the marked decrease in the Jorhat and Dibrugarh Schools cannot be accounted for by any peculiar circumstances of the year. The history of the Dibrugarh School during the past five years shows almost unchecked decline. In 1893-94, 36 pupils obtained certificates from this school. In 1894-95, the number was reduced to 14. In 1895-96, the number was still further reduced to 11. In the following year a slight improvement took place, when 15 pupils passed out, while in the year under review only ten pupils obtained certificates. In the Jorhat School, the number of pupils who obtained certificates (18) during the year is the lowest since the school was first opened in 1894-95.

In the Lakhimpur and Sibsagar districts the proportion of Mandals who possess no survey qualifications is considerable, these two districts alone accounting for 52 out of the 100 unqualified Mandals in the province. In view of the necessity which exists of providing a steady supply of trained Mandals in these districts, Mr. Cotton could not accept any proposal to close the survey schools; at the same time their continued want of success is a matter which calls for special enquiry. The remedy may lie in a relaxation of the survey school rules, which limit the number of free admissions, or in increased efforts by District Officers to make the schools more popular and induce unpassed Mandals to attend. The Chief Commissioner commends the subject to the Director's particular attention during his cold-weather tour.

4. The superior officers of the Department appear to have made a searching inspection of the papers of Mandals, Patwaris, and Supervisor Kanungos; but although in some districts there was a noticeable improvement in the work of Mandals and Patwaris, the testing of their work by Supervisor Kanungos, and the general supervision of the Land Records staff by Sub-Deputy Collectors, still leaves much to be desired. The Chief Commissioner regrets to observe the unfavourable comments on the work of Babu Bhola Nath Das, Sub-Deputy Collector of Tezpur, and Babu Hem Chandra Goswami, Sub-Deputy Collector of Dibrugarh. The remedy for this neglect lies in the hands of the District and Subdivisional Officers, who are primarily responsible for the management of the land records of their districts, and are in no way relieved of this duty by the separate appointment of a Director of Land Records. On the correct maintenance

of these records hinges the efficiency of the Land Revenue administration of the province, and any District Officer who fails to exercise a close and constant supervision over the office and field-work of his subordinate Land Records staff, is deficient in an important branch of his duties as a Revenue Officer. Valuable assistance was rendered in this respect by the late Mr. Kennedy, Deputy Commissioner of Nowgong, by Lieutenant Playfair and by Mr. Allen, Assistant Commissioners. The Chief Commissioner notices, however, that Mr. Nicholl, the Deputy Commissioner of Sibsagar, for the second year in succession has failed to inspect the papers or test the field-work of any Mandal or Supervisor Kanungo in his district.

5. The statement given in Appendix I to the Report shows that considerable amounts are outstanding in the Assam Valley districts on account of advances for the demarcation of trijunction points in the areas surveyed by local agency, and of the boundaries of grants and *la-khiraj* and *nisf-khiraj* estates. The demarcation of these estates has been finished in all the districts, and the demarcation of trijunction points is approaching completion. The Chief Commissioner trusts that no time will now be lost in recovery from the landholders concerned.

6. The most important administrative feature of the year was the inauguration of a system of continuous enquiry into agricultural conditions and statistics designed to provide a source of information for fiscal purposes and a trustworthy basis for the next re-assessment of the Assam Valley. To obtain this result, the mauza was selected as the most convenient unit, and mauza-books, which contain, for each village in the mauza and for the mauza itself, a set of continuous statistics of cultivation, resignations, wholesale and retail prices, sales of land, rates of subletting, and crop-cuttings, were introduced. The introduction of this book has already been carried out in the greater portion of the Sibsagar district by the Assistant Director, Mr. Basu, to whom the work of organizing the system of systematic collection of information has been entrusted. The Chief Commissioner observes that during the current year the system will be introduced in the Lakhimpur and Darrang districts, and in the sadr subdivision of the Kamrup district. It is incumbent on District and Subdivisional Officers to devote their close and personal attention to the correct and intelligent maintenance of these registers.

7. During the year Mr. B. C. Basu, B.A., M.R.A.C., M.R.A.S., was appointed Assistant to the Director of the Department. He was specially employed during the cold weather in introducing this mauza-book into the Sibsagar district, and instructing Sub-Deputy Collectors, Supervisor Kanungos and Mandals in the method of posting the requisite entries, and illustrating important facts by means of symbols on the cadastral maps. His special agricultural knowledge was also utilised in the establishment of an experimental farm at Upper Shillong. The Chief Commissioner notices that at the close of the year five acres of land had been broken up, and one-fourth of an acre planted with seven different varieties of potatoes. He hopes that the establishment of this farm will result in the introduction of new varieties of potatoes among the Khasias, who have suffered so severely from the decline of the potato industry, and that the local varieties, which have greatly deteriorated through disease and from continuous cultivation, will be gradually improved, or even superseded by imported strains.

8. The Department has not been idle in the publication of agricultural information. In addition to an excellent report on the cultivation of jute in Assam, prepared by Mr. Monahan, an elaborate monograph on cotton fabrics was compiled by Mr. H. F. Samman, I.C.S., and two bulletins,—one on the cultivation of rhea by Mr. Monahan and the other on the cultivation of black pepper in Assam by Mr. Basu,—were published during the year. Several District Officers and Sub-Deputy Collectors also communicated papers on various subjects of agricultural interest for incorporation in the Agricultural Ledger.

ORDERED, that a copy of this Resolution with a copy of the Report, be forwarded to the Commissioner, Assam Valley Districts, for information, special attention being invited to paragraphs 2, 4, 5 and 6 of the Resolution.

By the order of the Chief Commissioner of Assam,

F. C. HENNIKER,

for *Offg. Secretary to the Chief Commissioner of Assam*

A. S. P. O. (Rev.) No. 350—360—28-10-98.

ANNUAL REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR

1898-99.

BY

L. J. KERSHAW, Esq., I.C.S.,

OFFICIATING DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.

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FROM

L. J. KERSHAW, ESQ., I.C.S.,

Offg. Director, Department of Land Records and Agriculture, Assam,

TO

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 1st July 1899.

SIR,

I HAVE the honour to submit the Sixteenth Annual Report, giving an account of the operations of this Department for the year ending the 31st March 1899.

I have the honour to be,

SIR,

Your most obedient Servant,

L. J. KERSHAW,

Offg. Director, Department of Land Records and Agriculture, Assam.

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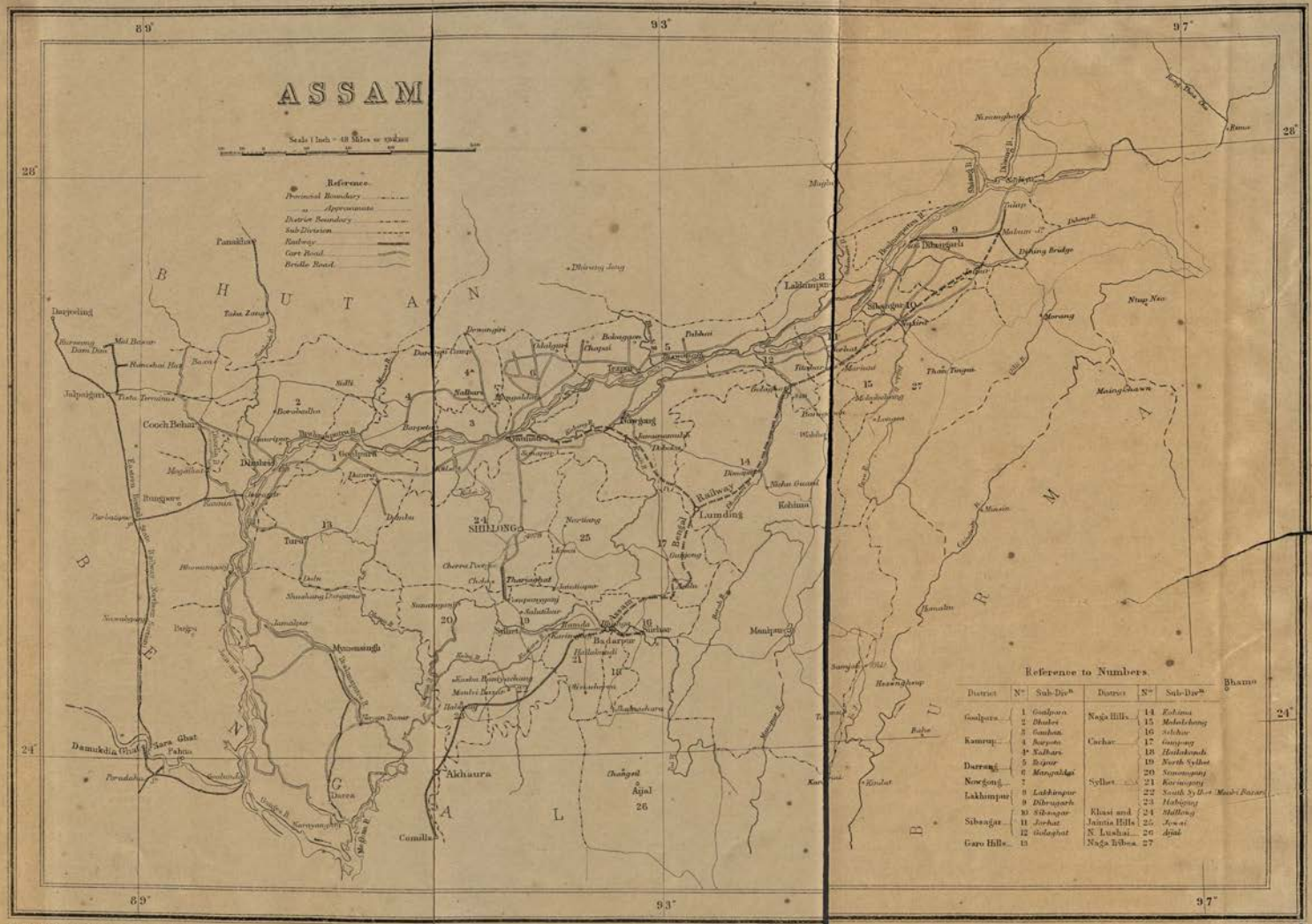

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ANNUAL REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR

1898-99.

CHAPTER I.

PREFATORY.

Introductory.

1. This report has been drawn up in accordance with the instructions laid down in the eighth Resolution of the Government of India, Revenue and Agricultural Department, No. 3—39-1, dated the 10th March 1897, on the proceedings of the agricultural conferences of 1893 and of 1895-96.

Charge.

2. Mr. F. J. Monahan, I C.S., was in charge of the Department from the 1st until the afternoon of the 15th April, when Mr. F. C. Henniker, I.C.S., assumed charge. On Mr. Henniker's appointment to the office of Secretary to the Chief Commissioner, on the afternoon of the 15th October 1898, I assumed charge of the Department and remained in charge until the close of the year. Mr. Bhupal Chandra Basu, B.A., M.R.A.C., M.R.A.S., *Eng.*, was Assistant to the Director throughout the year.

Tours of the Director.

3. Mr. Henniker started on his rains tour on the 16th September. After a short visit to Dhubri, where he inspected the traffic registration office and town settlement work then in progress under Rai Sarat Chandra Banerjee Bahadur, he proceeded to Maulvi Bazar, which he reached on the 25th September. He remained there until the 1st October, inspecting the work of the *ilam* settlement, and discussing settlement questions with the *Ilam* Settlement Officer, and returned to Shillong *viâ* Sylhet, arriving there on the 5th October.

I started on my first cold-weather tour on the 9th November. At Gauhati, the work of the mandals and kanungos of the north bank of the Kamrup district and the Gauhati survey school were inspected. Proceeding to Tezpur, the work of the Land Records staff of the sadr subdivision, and the office of the registrar kanungo were examined. I then marched along the trunk road to Mangaldai from November 17th till the 21st, inspecting at Gabru, Dhekiajuli, Orang and Dalgaon, the work of the local mandals and kanungos. At Mangaldai, the papers of the mandals and supervisor kanungos of the subdivision were examined, and the details of mauza-book work in the subdivision were discussed with Mr. Basu, whom I met there.

Leaving Mangaldai on the 24th November, I arrived at Silghat the following day, and during the course of a nine days' tour in Nowgong, was able to inspect thoroughly the work of the Land Records staff of the district, and to make arrangements for the special enquiries to be made at the close of the year.

Finishing my Nowgong tour at Chaparmukh, I proceeded *viâ* Gauhati to Nigriting, arriving there on the 9th December. At Dergaon, Golaghat, and Sibsagar, mauza-book work, the work of the Land Records staff and the offices of the registrar kanungos of the Golaghat and sadr subdivisions were inspected. From Sibsagar, I proceeded to Shillong, which I reached on the 23rd December.

On the 2nd January 1899, I started on my second tour in the Surma Valley. With the exception of a visit to Haripur, where the work of a number of Jaintia patwaris was inspected, ten days were spent at Sylhet, where I met the Chief Commissioner, and was present at the installation of Raja Girish Chandra Rai. Thence I proceeded to Maulvi Bazar, arriving there on the 17th January, where the *Ilam* Settlement Office was inspected, and a number of important settlement questions discussed with the

Settlement Officer. After paying a flying visit to the Dauracherra tea estate, where an interesting experiment in *Sisal* hemp cultivation is in progress, and examining on the ground classification work in the south of the subdivision, I proceeded to Karimganj, which I reached on the 25th. At Patharkandi, two days were occupied in examining the classification of a number of villages in the neighbourhood, and in inspecting the work of the Pratabgarh patwaris.

Returning to Karimganj on the 28th, I paid a two days' visit to Kanairghat in the Jaintia parganas, where the work of the local patwaris and supervisor kanungo was examined, and the office of the tahsildar inspected. Returning again to Karimganj, Badarpur was reached on the 3rd February, where I met the Cachar Settlement Officer, and discussed with him the Government of India's orders on the Cachar settlement, which had then been received. Accompanying the Rai Bahadur next day to Silchar, the work of the Settlement Office and of the large staff of patwaris and extra hands then engaged in settlement work, was inspected. A variety of settlement questions were discussed with the Settlement Officer during the next few days. I left Silchar for Shillong on the 11th February, arriving there on the 14th.

On the 24th February, I started on my third tour in the Assam Valley. From the 28th February till the 6th March was spent in the Jorhat subdivision, in inspecting the progress made in mauza-book work, the work of Land Records staff, the office of the registrar kanungo and the survey school.

Ten days were then spent in the sadr subdivision of the Lakhimpur district. At headquarters, the work of the Land Records staff and the survey school were inspected, and the progress made in mauza-book work examined. After a short visit to Margherita, the survey camp at Tinsukia was visited, where the work of the officers then undergoing a course of training in practical surveying was examined.

Leaving Dibrugarh, I arrived at Kamalabari on the 19th, where the work of the Jorhat-Majuli mandals and supervisor kanungo was examined. Thence I went to North Lakhimpur, halting *en route* a day at Goramur, where the papers of a number of mandals were inspected. After inspecting the North Lakhimpur subdivision, I proceeded to Barpeta, halting at Tezpur one day. I finished my tour at Barpeta, where I inspected the maps of the extension survey then in progress, the Land Records staff of the subdivision and the registrar kanungo's office. I returned to Shillong on the 31st March.

In all, Mr. Henniker and I were on tour (exclusive of visits to the experimental farm), 145 days during the year.

Tours of the Assistant to the Director.

4. The 1st of April found Mr. Basu at Sibsagar, where he was halting, after introducing the mauza-book into the sadr subdivision of the district. After a week spent in the Golaghat subdivision, he returned to Shillong on the 20th April.

Mr. Basu started on his rains tour on the 14th August. Proceeding direct to Dibrugarh, he was occupied for ten days at headquarters instructing kanungos and mandals in mauza-book work. He then spent a full month touring in the three subdivisions of the Sibsagar district, inspecting everywhere the progress made in mauza-book work, and taking the opportunity at the same time to inspect the ordinary settlement maps and papers of a number of mandals. He returned to Shillong on the 1st October.

Mr. Basu started on his cold-weather tour on the 14th November. The first six weeks were spent in touring through the sadr and Mangaldai subdivisions of the Darrang district, introducing the mauza-book. Proceeding then to Dibrugarh, Mr. Basu spent a week in inspecting the progress of mauza-book work in the sadr subdivision of the Lakhimpur district. He then proceeded to the north bank, and after a ten days' tour spent in introducing the mauza-book in the North Lakhimpur subdivision, he returned to Shillong, arriving there on the 17th January.

His cold-weather tour was resumed on the 4th February. After a four days' halt at Gauhati, where preliminary arrangements for introducing the mauza-book into the Gauhati subdivision were made, he crossed over to Mangaldai, and after inspecting the progress made in mauza-book work in that subdivision, returned to Shillong on the 25th February. Mr. Basu was unable, through continued ill-health, to resume his tour in March.

During the year, Mr. Basu paid frequent visits to the experimental farm at Upper Shillong, and superintended personally every stage of the operations there. Inclusive of such visits, he was on tour in all 190 days during the year.

CHAPTER II.

LAND RECORDS ESTABLISHMENTS.

Supervisor kanungos.

5. The following statement shows the number of supervisor kanungos entertained in each grade in each district, at the close of the year under report, and at the close of the preceding year, and compares the number actually entertained with the sanctioned scale for the province :

Name of district.	Number of supervisor kanungos actually entertained on the 1st April 1898.			Number of supervisor kanungos actually entertained on the 1st April 1899.			Increase or decrease during the year.		
	First grade.	Second grade.	Total.	First grade	Second grade.	Total.	First grade.	Second grade.	Total.
1	2	3	4	5	6	7	8	9	10
Cachar	2	4	6	2	6	8	...	+2	+2
Sylhet (Jaintia)	...	4	4	...	4	4	...	...	...
,, (*Ilam*)	...	...	...	...	3	3	...	+3	+3
Goalpara	...	1	1	...	1	1	...	...	...
Kamrup	6	8	14	6	8	14	...	...	...
Darrang	5	1	6	5	1	6	...	...	...
Nowgong	4	4	8	4	4	8	...	...	...
Sibsagar	3	6	9	3	6	9	...	...	...
Lakhimpur	2	1	3	2	1	3	...	...	...
Total for the Province	22	29	51	22	34	56	...	+5	+5
Sanctioned scale for the Province	33	20	53	35	21	56	+2	+1	+3

As stated in the last year's report, the two kanungos sanctioned for the Cachar district in letter No. 61Rev.—674R., dated the 15th February 1898, from the Secretary to the Chief Commissioner of Assam, were not appointed till the year under report. The entertainment of 3 supervisor kanungos, 2 in the first and one in the second grade, with effect from the 1st October 1898, for the *ilam* estates, and *khas* lands in the district of Sylhet, was sanctioned by letter No. 1506P.S.—8397G., dated the 25th November 1898, from the Secretary to the Chief Commissioner of Assam. The appointments have been given to qualified and experienced men who have rendered approved service on the settlement staff. They were all appointed, in the first instance, in the second grade.

Circles of supervisor kanungos.

6. The statement, Appendix I, shows the number of mandals' or patwaris' circles and the total area comprised in each supervisor kanungo's circle. The average area of supervisor kanungos' circles in the Assam Valley, in Sylhet (Jaintia), and in Cachar is shown below :

Class of officer.	Settled area in *bighas*.						Unsettled waste, in *bighas*.			Total in *bighas*.		
	Ordinary tenures.			Grants, permanently-settled, *lakhiraj* or *nisf-khiraj* estates.								
	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.
1	2	3	4	5	6	7	8	9	10	11	12	13
Supervisor kanungo	101,484	146,424	119,458	35,167	13,102	89,564	158,856	74,855	41,288	295,507	234,381	250,310

Pending the completion of survey and settlement operations, no distribution of the *ilam* estates and *khas* lands in Sylhet into kanungos' circles has yet been made.

7. The following table shows the number and grading of mandals and patwaris in each district, as they stood on the 1st April 1899, and compares the figures with those of the previous year and with the sanctioned scale:

Grading and pay of mandals and patwaris; areas of their circles.

Name of district.	Sanctioned scale.				Number entertained on the 1st April 1898.				Number entertained on the 1st April 1899.				Increase or decrease during the year.			
	First grade.	Second grade.	Third grade.	Total.	First grade.	Second grade.	Third grade.	Total.	First grade.	Second grade.	Third grade.	Total.	First grade.	Second grade.	Third grade.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Cachar	19	30	48	97	3	17	40	60	5	26	66	97	+2	+9	+26	+37
Sylhet (Pratabgarh)	...	1	3	4	...	1	3	4	...	1	3	4	...	...	...	...
,, (Jaintia)	10	15	27	52	4	15	33	52	9	14	29	52	+5	−1	− 4	...
,, (*Ilam*)	7	10	17	34	...	...	2	2	...	...	34	34	...	...	+32	+32
Goalpara	7	10	18	35	3	10	20	33	6	9	19	34	+3	−1	− 1	+1
Kamrup	59	88	149	296	39	95	161	295	38	104	153	295	−1	+9	− 8	...
Darrang	28	42	70	140	22	45	72	139	22	42	75	139	...	−3	+ 3	...
Nowgong	33	50	85	168	24	41	101	166	21	41	106	168	−3	...	+ 5	+2
Sibsagar	40	62	103	205	31	68	104	203	30	65	108	203	−1	−3	+ 4	...
Lakhimpur	21	32	55	108	7	35	66	108	7	39	62	108	...	+4	− 4	...
Total	224	340	575	1,139	133	327	602	1,062	138	341	655	1,134	+5	+14	+53	+72

In addition to two third-grade patwaris appointed to keep up to date the maps of that portion of the Hakaluki tahsil of the Sylhet district which was surveyed cadastrally during the year 1896-97, the entertainment with effect from the 1st October 1898, of a staff of 32 patwaris, 7 in the first, 10 in the second and 15 in the third grade, for the *ilam* estates and *khas* lands in the Sylhet district, was sanctioned in letter No. 1506P.S.—8397G., dated the 25th November 1898, from the Secretary to the Chief Commissioner of Assam. Of these appointments, 24 have been given to local candidates who have done satisfactory work with the survey and settlement parties, and 10 to men who rendered approved service under the *Ilam* Settlement Officer or elsewhere, and received certificates of competence.

All these men have been appointed, in the first instance, in the third grade, so that by the experience gained during the 1898-99 field season, the most deserving men may be promoted to the higher grades. Twenty-five promotions of mandals to the first grade were sanctioned during the year, but the number entertained in that grade at the end of the year was, owing to vacancies caused by deaths, resignations, promotions to supervisor kanungoships, etc., only 5 more than at the end of the preceding year.

The statement below shows the average areas of mandals' and patwaris' circles in the Assam Valley, in Sylhet (Jaintia), and in Cachar. In Sylhet (excluding Jaintia), no distribution of patwaris' circles has, pending the completion of survey and settlement operations, been made:

Class of officer.	Settled area in *bighas*.						Unsettled waste in *bighas*.			Total in *bighas*.		
	Ordinary tenures.			Grants, permanently-settled, *lakhiraj* or *nisf-khiraj* estates.								
	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.	Assam Valley.	Sylhet (Jaintia).	Cachar.
1	2	3	4	5	6	7	8	9	10	11	12	13
Mandals or patwaris ...	5,137	11,263	9,852	1,780	1,003	7,387	8,941	5,758	3,405	14,958	18,029	20,644

Distribution of mandals' and patwaris' pay.

8. During my tours in the Assam Valley I received constant complaints regarding the working of the rules for the distribution of mandals' pay, issued under cover of this office circular No. 3, dated the 4th November 1897. Owing more to the failure to work these rules properly than to any defect in the rules themselves, arrears in some districts have grown so large, and the discontent of the subordinate land records staff so pronounced, that it has become necessary since the close of the year to take the whole question into consideration and to devise some means of clearing off the heavy arrears which have been allowed to accumulate. Several devices were proposed to overcome the difficulty,—a reversal to the old system, the creation of subdivisional scales, and the extension of the period of keeping in deposit undisbursed pay, but it is anticipated that by the simple expedient of altering slightly the certificate at the foot of form A, by which it becomes possible at any time to clear off existing arrears, the present unsatisfactory state of things will cease. As, however, it is hopeless to expect that arrears can in the future be avoided if tahsildars and mauzadars, on whom the working of the rules mainly depends, are permitted to exhibit any laxity in the disbursement of pay or the return of acquittance rolls, district officers have been requested to issue stringent executive orders to ensure that pay when received is promptly disbursed, and acquittance rolls returned without delay to headquarters.

Qualifications of mandals, patwaris, and candidates.

9. The following statement gives details of the number of qualified mandals, patwaris, and candidates for appointments on the Land Records staff in each district, and compares the figures with those of the preceding year :

District.	Total number of mandals or patwaris on 31st March 1899.	Total number of mandals or patwaris exempted on 31st March 1899.	Men with first-class certificates on 31st March.				Men with second-class certificates on 31st March.			
			Mandals or patwaris.		Candidates.		Mandals or patwaris.		Candidates.	
			1898.	1899.	1898.	1899.	1898.	1899.	1898.	1899.
1	2	3	4	5	6	7	8	9	10	11
Cachar	97	...	20	29	53	44	40	68	214	186
Sylhet ... (Jaintia) ...	52	...	30	27	...	...	22	25	8	6
Sylhet ... (Pratabgarh) ...	4	...	3	3	3	3	1	1	1	1
Sylhet ... (*Ilam*) ...	34	...	...	23	...	5	..	7	...	4
Goalpara	34	...	9	23	...	...	17	9	...	...
Kamrup	300	4	83	81	45	65	212	215	77	104
Darrang	139	4	23	22	6	5	105	102	20	15
Nowgong	168	...	26	24	3	5	104	104	13	17
Sibsagar	203	1	46	46	...	3	132	139	35	59
Lakhimpur	108	...	10	9	3	3	68	74	12	13
Total	1,139	9	250	287	113	133	701	744	380	405

On the 31st March 1899, out of 1,139 employed in the province, 1,031 mandals and patwaris were qualified in surveying, as against 951 out of 1,063 on the 31st March 1898. The number of mandals and patwaris with first-class certificates or equivalent qualifications rose from 250 to 287, an increase due mainly to 9 and 23 men with first-class survey certificates having been appointed in Cachar and the *ilam* estates and *khas* lands in Sylhet respectively, and to the fact that 14 mandals in Goalpara received first-class certificates during the year, for good work done in the extension of cadastral survey carried out in the Sidli Duars. In every other district except Sylhet (Pratabgarh) and Sibsagar, there was a slight falling off in the number of mandals with first-class certificates due to deaths, resignations, and appointments of first-grade mandals as supervisor kanungos and mauzadars. The total number of mandals and patwaris without any survey certificates was 99 (excluding 9 exempted

from passing in surveying), against 100 (excluding 14 exempted) at the end of the previous year.

Of the 99 mandals and patwaris in the province without any survey qualifications, Nowgong is responsible for 40, Lakhimpur for 25 and Sibsagar for 17. The attention of the Deputy Commissioners of these districts was directed during the year to the necessity of deputing unpassed men to survey schools and of requiring them to obtain second-class certificates on pain of dismissal.

Survey schools.

10. The following statement gives in detail the number of pupils passed in each of the three schools in the province during the year, the average cost per pupil, and compares the figures with those of the preceding year:

Year.	Number of pupils who received first-class certificates.				Number of pupils who received second-class certificates.				Total passed.	Total cost of the school.	Total receipts.	Net cost.	Average net cost of each passed pupil.
	Mauzadars.	Mandals.	Candidates.	Total.	Mauzadars.	Mandals.	Candidates.	Total.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14
										Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1897-98. Gauhati ...	...	1	14	15	...	...	47	47	62	1,153 3 3	693 8 0	459 11 3	7 6 8
1897-98. Jorhat ...	...	...	...	...	...	6	12	18	18	571 0 8	205 0 0	366 0 8	20 5 4
1897-98. Dibrugarh ...	...	...	1	1	...	2	7	9	10	528 0 0	100 0 0	428 0 0	42 12 9
Total for 1897-98 ...	...	1	15	16	...	8	66	74	90	2,252 3 11	998 8 0	1,253 11 11	13 14 9
1898-99. Gauhati ...	...	2	23	25	...	3	54	57	82	1,064 0 0	940 8 0	123 8 0	1 8 0
1898-99. Jorhat ...	...	2	...	2	...	3	24	27	29	466 1 0	408 5 0	57 12 0	1 15 10
1898-99. Dibrugarh ...	...	1	2	3	...	6	12	18	21	585 15 8	214 0 0	371 15 8	17 11 5
Total for 1898-99 ...	...	5	25	30	...	12	90	102	132	2,116 0 8	1,562 13 0	553 3 8	4 3 1

The results are very satisfactory. The total number of pupils passed has increased from 90 to 132 (the highest during the past ten years) and the net cost to Government per pupil has decreased from Rs. 13-14-9 to Rs. 4-3-1.

As desired in paragraph 3 of the Chief Commissioner's Resolution on last year's Departmental Report, special attention was paid during the year to the working of these schools. All three schools were inspected during the year. The Gauhati school, I found, was being efficiently conducted, but at Jorhat the survey master was so incompetent that it was necessary to remove him. At Dibrugarh the survey master was found to be ignorant of arithmetic, and was given three months to qualify himself. To this cause,—the incapacity of the masters,—I attribute, in a great measure, the want of success of the Jorhat and Dibrugarh schools in the past.

Two examinations for first-class survey certificates were held by the Superintendent of Land Records at the Gauhati survey school during the year, and one examination at each of the survey schools at Jorhat and Dibrugarh. Twenty-five pupils from the Gauhati, two from the Jorhat, and three from the Dibrugarh school passed the examination.

Survey qualifications of tahsildars and mauzadars.

11. No tahsildar was examined in practical surveying by the Superintendent of Land Records under the provisions of Rule 7, Section IV, Chapter V of the Manual of Executive Rules. Babu Ghana Kanto Chaliha, tahsildar of Kalaigaon, Darrang, went through a course of practical training in the survey camp in the Lakhimpur district and obtained the usual certificate. Of the 26 tahsildars in the province, 22 have now passed in practical surveying, and 3 have been exempted; the remaining one, who was appointed in December 1897, has not yet undergone the required test in practical surveying.

The following statement shows the number of Assam Valley mauzadars who had qualified in surveying on the 31st March 1899, as compared with the figures of the preceding year :

District.	Total number of mauzadars on 31st March 1899.	Number of mauzadars with first-class certificates on 31st March.		Number of mauzadars with second-class certificates on 31st March.	
		1898.	1899.	1898.	1899.
1	2	3	4	5	6
Goalpara...	7	1	1	1	2
Kamrup	8	4	4	2	2
[illegible]	13	5	6	3	4
[illegible]ng	31	6	7	3	3
[illegible]	28	1	2	17	15
Lakhi[illegible]	31	7	6	4	5
Total	118	24	26	30	31

Inspection by the Director of Land Records and Agriculture, the Assistant to the Director of Land Records and Agriculture, and the Superintendent of Land Records.

12. The following statement shows the number of mandals, patwaris, and supervisor kanungos whose work was inspected by me, the Assistant to the Director, and the Superintendent of Land Records :

District.	Subdivision.	Total number of supervisor kanungos in the cadastrally surveyed areas.	Number of kanungos whose work was inspected by			Total number of mandals or patwaris in the cadastrally-surveyed areas.	Number of mandals and patwaris whose work was inspected by			Remarks.
			Director, Department of Land Records and Agriculture, Assam.	Assistant to the Director, Department of Land Records and Agriculture, Assam.	Superintendent of Land Records.		Director, Department of Land Records and Agriculture, Assam.	Assistant to the Director, Department of Land Records and Agriculture, Assam.	Superintendent of Land Records.	
1	2	3	4	5	6	7	8	9	10	11
Kamrup ...	Barpeta ...	3	2	...	3	61	24	...	61	
	Gauhati ...	11	3	...	10 (*a*)	210	21	...	176 (*b*)	(*a*) Of these, 3 were visited twice.
Darrang ...	Mangaldai ...	4	4	...	4	82	42	...	79	(*b*) Of these, 55 were visited twice.
	Tezpur ...	2	2	...	2	35	35	...	29	
Nowgong ...	Nowgong ...	8	8	...	8 (*c*)	160	56	...	156 (*d*)	(*c*) Of these, 1 was visited twice.
Sibsagar ...	Golaghat ...	2	2	...	2	52	20	14	51	(*d*) Of these, 4 were visited twice.
	Jorhat ...	4	4	...	4	73	57	10	70	
	Sadr	3	3	...	3	71	24	12	55	
Lakhimpur ...	North Lakhimpur ...	1	1	...	1	20	18	...	18	
	Dibrugarh ...	2	2	2	2	29	9	14	26	
Goalpara ...	Sadr (Bijni and Sidli)	1	...	...	1	22	...	...	22	
Sylhet ...	Jaintia ...	4	2	...	3	52	18	...	37	
	Pratabgarh ...	...	...	...	...	4	4	...	...	
Total ...	.....	45	33	2	43	871	328	50	780	

Out of the 45 supervisor kanungos and 871 mandals employed in the cadastrally surveyed area of the province (excluding those employed in Cachar and in the *ilam* and other *khas* lands in Sylhet), I inspected the work of 33 kanungos and 328 mandals and patwaris.

Mr. O'Donel was on tour 306 days during the year, and inspected the work of the Land Records staff of the Jaintia parganas and of every subdivision in the Assam Valley. He inspected twice the work of 3 supervisor kanungos and 55 mandals in the sadr subdivision of Kamrup and of one supervisor kanungo and 4 mandals in Nowgong. In addition, he held at Gauhati, Jorhat, and Dibrugarh 4 survey school examinations.

A brief summary of the results of the inspections made is given below :

Sylhet (*Jaintia*).—The work, peculiarly important in Jaintia, in view of the intricate nature of many of the entries to be made, of carrying out in the *jamabandi* corrections consequent on orders passed in mutation cases had not, at the time of my inspection, received sufficient attention at headquarters, and at Kanairghat the work, I found, had not even commenced. Crop statements were generally prepared with great accuracy, but inspection of survey stations was everywhere backward.

The Deputy Commissioner, however, since the close of the year, has reported that arrears in correction work and in survey station inspections have been cleared off.

Goalpara.—I was unable to inspect the Land Records staff of this district, but the Superintendent of Land Records reports that, owing to the delay in setting the mandals free from extension survey work, the testing of *sabek* dags was entirely neglected. New cultivation was with difficulty measured up late in the season, and not checked by the kanungos, but that *dariabadi* work was efficiently tested.

Kamrup.—In the sadr subdivision field measurements by improper methods were detected, and mandals generally failed to record crop entries during their hot weather tour. In the Barpeta subdivision the work of the Land Records staff was on the whole satisfactory, but the inspection of theodolite stations was backward, and in 7 mauzas *faut-ferar* lists had not been tested by the supervisor kanungos.

Darrang.—In the sadr subdivision, the kanungos failed to test properly mandals' survey of new cultivation and throughout the district rule 38 of the Rules for the proper maintenance of settlement maps and records was neglected, and mandals failed everywhere during the hot weather tour to record crop entries. At headquarters, the office of the registrar kanungo was found in a very unsatisfactory state.

Nowgong.—Owing to the serious decrease in revenue in this district of late years, the work of the land records staff was subjected to a very searching inspection, both by Mr. O'Donel and me. At head-quarters, the work of carrying out corrections in the *jamabandi* was found to be seriously in arrears. Although the unauthorized *jotrahin* lists had disappeared, the result of the kanungo's testing of the mandals' *faut-ferar* lists showed that these lists had been very loosely prepared, and with little regard to instructions. As elsewhere, the testing of these lists by tahsildars and mauzadars was carried out in a perfunctory manner.

The special enquiries held towards the close of the year in this district, the results of which are referred to in more detail in paragraph 28 show that concealed cultivation and under classification is very common.

The attention, however, which has been directed during the past two years to the Land Records staff of the district has had a marked effect in increasing its efficiency.

Sibsagar.—In the sadr and Golaghat subdivisions, the supervision exercised over the work of mandals, both by Sub-Deputy Collectors and kanungos, left much to be desired. In Golaghat, mandals failed to record crop entries during the hot weather tour, and throughout the district *faut-ferar* lists were insufficiently tested by mauzadars and tahsildars. At Sibsagar several serious inaccuracies were detected in the work of carrying out corrections in *jamabandis*. The work of the Land Records staff of the Jorhat subdivision was found generally in a satisfactory state.

Lakhimpur.—The mandals of the sadr subdivision were found to be generally incapable and out of hand, due to a want of proper supervision by the Sub-Deputy Collector and kanungos. *Faut-ferar* lists were prepared with great laxity, and insufficiently tested and incorrect methods of survey were detected.

The Land Records staff, on the contrary, of North Lakhimpur is excellent, and contrasts favourably with the condition of the staff in the sadr subdivision.

13. The statement below shows the number of days spent on tour by each of the Sub-Deputy Collectors who held charge of subdivisions and tahsils during the year; details of the inspection work done by them are given in Appendix A:

Touring and inspection by Sub-Deputy Collectors.

Name.	Subdivision.	Number of days in charge.	Number of days on tour.			Remarks.
			In cadastral mauzas.	In non-cadastral mauzas.	Total.	
1	2	3	4	5	6	7
[illegible]ndra Mitra ...	North Sylhet (Jaintia)	365	161	16	177	
[illegible]Kumar Ghosh ...	„ „ ...	298	140	...	140	
„ Jana[illegible]Das	Dhubri	137(*a*)	4	37	41	(*a*) Exclusive of 66 days spent in survey camp.
Munshi Faizuddin Ahmed ...	„	167	136	17	153	
Ditto ditto ...	Dhubri (Bijni tahsil)	137	114	...	114	
Babu Abhoy Sankar Guha ...	Barpeta (*b*) ...	91	8	6	14	(*b*) The subdivision was without a Sub-Deputy Collector for 103 days.
„ Lakheswar Sarma ...	„	127(*c*)	75	...	75	(*c*) Exclusive of 79 days spent in survey camp.
„ Gopal Chandra Puri Bhuyan	„	44	21	3	24	
„ Rajanikanta Bardalai ...	Gauhati	365	166	7	173	
„ Mohendra Chandra De ...	„	206	92	10	102	
Maulvi Abrar Hussain ...	„	77(*d*)	42	...	42	(*d*) Exclusive of 72 days spent in survey camp.
Babu Bholanath Das	Gauhati Boko tahsil...	124	55	3	58	
„ Jajneswar Das Gupta ...	Mangaldai ...	365	200	2	202	
„ Ramakanta Barua ...	„ ...	112(*e*)	30	...	30	(*e*) Exclusive of 77 days spent in survey camp.
„ Bholanath Das	Tezpur ...	241	32	9	41	
„ Mohendra Chandra De ...	„ ...	116	45	29	74	
„ Radha Mohan Das ...	Nowgong ...	365	177	25	202	
„ Nagendra Chandra Datta ...	„ ...	221	85	3	88	
„ Harendra Kumar Ghosh ...	„ ...	30	22	...	22	
„ Sarat Chandra Lahiri ...	Golaghat ...	365	178	2	180	
„ Radha Kanta Handiqui ...	Jorhat ...	365	164	3	167	
Munshi Didaruddin Ahamed ...	Sadr ...	365	166	...	166	
Babu Hem Chandra Goswami ...	Dibrugarh ...	354(*f*)	80	106	186	(*f*) Exclusive of 11 days spent at Departmental Examination.
„ Ram Kumar Aditya ...	North Lakhimpur ...	365	116	46	162	

Of the Sub-Deputy-Collectors in charge of districts and sub-divisions, Babu Jajneswar Das Gupta, Mangaldai, and Babu Radha Mohan Das, Nowgong, spent the greatest number of days on tour, 202 each. In every other subdivision, except Tezpur and Barpeta, the prescribed minimum of 150 days was attained. As, however, the Barpeta subdivision was without a Sub-Deputy Collector for 103 days, the number of

days (113) spent on tour by the three Sub-Deputy Collectors in charge was satisfactory. The explanation of the short touring performed in Tezpur, that the subdivision was without a Sub-Deputy Collector for some days in the cold weather, cannot be accepted. The cause appears to be the laxity of the two Sub-Deputy Collectors (Babus Bholanath Das and Mahendra Chandra De) who were in charge 357 days, out of which only 115 were spent on tour, 41 by Babu Bholanath Das and 74 by Babu Mahendra Chandra De.

Touring and inspection by supervisor kanungos and surveyors.

14. The touring and inspection work done during the year by the supervisor kanungos and the two surveyors at Gauhati and Dibrugarh is shown in detail in Appendix B. The statement below shows that the kanungos of 26 out of the 53 circles worked up to the prescribed minimum of 200 days.

Excluding Cachar, where the kanungos have not yet entered on their regular duties, and the Jaintia Parganas, where the heavy floods prevent the prescribed minimum being attained, out of the remaining 41 circles in the province, the kanungos of 25 circles were on tour over 200 days.

An analysis of the figures district by district shows very satisfactor[illegible]

In Darrang, in each of the six kanungos' circles, the requisite amoun[illegible] was performed, the average being 217 days. In Nowgong, in six of the [illegible] circles over 200 days were spent on tour, the average being 214. In Sibsagar, [illegible] five of the nine circles, the prescribed minimum was attained, the average being 200 days, while in Kamrup, although in only half the circles, the requisite amount of touring was performed, the average amounted to 200 days. In Lakhimpur, the average was 194, and in Goalpara 179 days. Neither of the two Government surveyors spent a sufficient number of days on tour.

District.	Subdivision.	Name of circle.	Name of supervisor kanungo or surveyor.	Number of days in charge.	Number of days on tour.	Remarks.
1	2	3	4	5	6	7
Cachar ...	Hailakandi ...	Hailakandi ...	Binodbehari Chaudhuri ...	365	92	
„ ...	„ ...	Sarasput ...	Dinanath Ghosh	286	110	
„ ...	Sadr ...	Chatlahaor ...	„ „	79	45	
„ ...	„ ...	„ ...	Ram Doyal Chakravarti ...	304	110	
„ ...	„ ...	Katigara ...	Gopi Charan De	365	178	
„ ...	„ ...	Barakpar ...	Shambhuram Das ...	275	66	
„ ...	„ ...	„ ...	Anukulchandra Banerjea (Offg.)	90	...	
„ ...	„ ...	Udharband ..	Shyama Charan Guha ...	365	217	
„ ...	„ ...	Lakhipur ...	Kaminikumar De ...	365	104	
„ ...	„ ...	Sonapur ...	Jogesh Chandra Mitra ...	304	72	
Sylhet ...	North Sylhet	Kanairghat ...	Shashi Kumar Kar ...	234	13	
„ ...	„ ...	„ ...	Harimohan Das (Offg.) ...	131	111	
„ ...	„ ...	Jaintiapur(*a*) ...	Kumudinikanta Mazumdar ...	244	20	(*a*) The circle was without a supervisor kanungo for 15 days.
„ ...	„ ...	„ ...	Jajneswar Datta (Offg.) ...	89	80	
„ ...	„ ...	„ ...	Sarat Chandra Sarma ...	17	16	
„ ...	„ ...	Goainghat I ...	Abdus Sabur	365	167	
„ ...	„ ...	„ II (*b*)	Ishan Chandra Gupta (Offg.)	114	...	(*b*) The circle was without a supervisor kanungo for 30 days.

District.	Subdivision.	Name of circle.	Name of supervisor kanungo or surveyor.	Number of days in charge.	Number of days on tour.	Remarks.
1	2	3	4	5	6	7
Sylhet ...	North Sylhet	Goainghat II (*b*)	Harimohan Das (Offg.) ...	90	...	
„ ...	„ ...	„ „ ...	Shashikumar Kar... ...	131	110	
Goalpara ...	Dhubri ...	Bijni ...	Ratiram Das	365	179	
Kamrup ...	Barpeta ...	Bajali ...	Joyram Deka	244	97	
„ ...	„ ...	„ ...	Munshi Ellias Ali... ...	121	87	
„ ...	„ ...	Roha ...	Bhagirath Deka	230	137	
„ ...	„ ...	„ ...	Sitaram Das (Offg.) ...	135	73	
„ ...	„ ...	Barpeta ...	Munshi Ellias Ali ...	231	79	
„ ...	„ ...	„ ...	Shibnath Deka (Offg.) ...	134	91	
„ ...	Gauhati ...	Beltola ...	Briti Sen	65	23	
„ ...	„ ...	„ ...	Shibram Das	300	168	
„ ...	„ ...	Palasbari ...	Konnath Deka	26	7	
„ ...	„ ...	„ ...	Titaram Gagai	339	202	
„ ...	„ ...	Chhaigaon ...	Mantanram Das	365	192	
„ ...	„ ...	Boko ...	Rangdev Sarma	17	5	
„ ...	„ ...	„ ...	Naomal Das	348	189	
„ ...	„ ...	Patidarrang ...	Batiram Das	365	171	
„ ...	„ ...	Rangia ...	Titaram Gogoi	26	1	
„ ...	„ ...	„ ...	Konnath Deka	339	215	
„ ...	„ ...	Barkhetri ...	Shibnath Deka	214	96	
„ ...	„ ...	„ ...	Muhammad Ellias ...	30	26	
„ ...	„ ...	„ ...	Joyram Deka	121	108	
„ ...	„ ...	Nalbari ...	Santiram Das	365	218	
„ ...	„ ...	Hajo ...	Jiuram Das	217	82	
„ ...	„ ...	„ ...	Ramrath Datta	148	127	
„ ...	„ ...	Barama ...	Naomal Das	17	3	
„ ...	„ ...	„ ...	Rangdev Sarma	348	195	
„ ...	„ ...	Tambulpur ...	Jagatram Das	365	206	
Darrang ...	Mangaldai ...	Patharughat ...	Chandra Kanta Sarkar ...	365	230	
„ ...	„ ...	Mangaldai ...	Kalamani Das	365	237	
„ ...	„ ...	Kalaigaon ...	Rammal Das	317	170	
„ ...	„ ...	„ ...	Umakanta Saharia (Offg.) ...	48	37	
„ ...	„ ...	Bengbari ...	Jagannath Deka	365	201	
„ ...	Tezpur ...	Eastern Circle...	Gangaram Das	365	216	
„ ...	„ ...	Western Circle	Manuram Talukdar ...	365	211	
Nowgong ...	Nowgong ...	Silghat ...	Molan Chandra Bora ...	365	211	
„ ...	„ ...	Town ...	Puaram Mahanta... ...	365	212	
„ ...	„ ...	Doboka ...	Taranath Bora	365	241	
„ ...	„ ...	Roha ...	Minaram Das	365	209	

District.	Subdivision.	Name of circle.	Name of supervisor kanungo or surveyor.	Number of days in charge.	Number of days on tour.	Remarks.
1	2	3	4	5	6	7
Nowgong ...	Nowgong ...	Dhing ...	Gobindaram Datta ...	365	234	
„ ...	„ ...	Gerua ...	Kalaram Bardalai ...	340	174	
„ ...	„ ...	„ ...	Surath Chandra Bora ...	25	24	
„ ...	„ ...	Ghugua ...	Ramrath Datta	217	84	
„ ...	„ ...	„ ...	Jiuram Das	148	108	
„ ...	„ ...	Mayang ...	Gazendranarain Das ...	365	218	
Sibsagar ...	Golaghat ...	Northern Circle	Durgaram Datta... ...	365	233	
„ ...	„ ...	Southern „	Bhakatram Datta ...	335	173	
„ ...	„ ...	„ „	Haranath Datta (Offg.) ...	30	24	
„ ...	Jorhat ...	Eastern Circle...	Katiram Das	130	112	
„ ...	„ ...	„ „ ...	Bholaram Datta (Offg.) ...	235	74	
„ ...	„ ...	North-Western Circle.	Mahiram Das (senior) ...	365	211	
„ ...	„ ...	South-Western Circle.	Mahiram Das (junior) ...	365	196	
„ ...	„ ...	Majuli	Shibnath Sarma	365	208	
„ ...	Sadr ...	Eastern Circle	Shibram Bora	335	117	
„ ...	„ ...	„ „ ...	Manpur Gogoi	30	18	
„ ...	„ ...	Central Circle...	Govinda Nath Ray ...	365	206	
„ ...	„ ...	Western Circle	Lalitram Chaudhuri ...	365	233	
Lakhimpur ...	Dibrugarh ...	Dibrugarh ...	Moheswar Das	365	189	
„ ...	„ ...	Chabua ...	Lakshmikanta Das ...	365	192	
„ ...	North Lakhimpur.	North Lakhimpur.	Shahabuddin Ahmed ...	130	9	
„ ...	„ ...	„ ...	Bhabiram Das (Offg.) ...	235	193	
Kamrup ...	Gauhati ...	...	Samudranarain Das, Surveyor	365	185	
Lakhimpur ...	Dibrugarh ...	... ...	Muzaffarali, Surveyor ...	250	72	
„ ...	„ ...	...	Chandreswar Chengkakati (Offg.)	115	66	

15. Brief details of the inspection work done by Deputy Commissioners and Subdivisional Officers are given in the statements below; full particulars will be found in Appendix C:

Inspection of Land Records staff by District and Subdivisional Officers.

I.—Inspections by Deputy Commissioners.

Name of Deputy Commissioner.	District.	Supervisor kanungos.		Mandals.				
				In cadastral area.			In non-cadastral area.	
		Total number.	Number whose work was inspected.	Total number.	Number whose work was inspected.	Number whose maps were checked.	Total number.	Number whose work was inspected.
1	2	3	4	5	6	7	8	9
[illegible] ...	Sylhet ...	4	2	56	2	...	...	...
Captain [illegible]on ...	Kamrup ...	14	...	271	85	5	29	12
Colonel M. A. Gray	Darrang ...	6	...	117	13	...	22	...
W. J. Reid, Esq.	Nowgong ...	8	...	160	3	1	8	2
B. V. Nicholl, Esq. ...	Sibsagar ...	9	...	196	51	1	7	...
R. C. Hamilton, Esq. ...	Lakhimpur ...	3	1	49	2	2	59	4
Total	.....	44	3	849	156	9	125	18

II.—Inspections by Subdivisional Officers.

Name of Subdivisional Officer.	District.	Subdivision.	Supervisor kanungos.		Mandals.				
					In cadastral area.			In non-cadastral area.	
			Total number.	Number whose work was inspected.	Total number.	Number whose work was inspected.	Number whose maps were checked.	Total number.	Number whose work was inspected.
1	2	3	4	5	6	7	8	9	10
Rai Madhab Chandra Bardalai Bahadur.	Kamrup ...	Barpeta ...	3	...	61	22	9	9	8
Lieutenant A. Playfair ...	Darrang ...	Mangaldai ...	4	...	82	82	12	2	1
F. E. Jackson, Esq. ...	Sibsagar ...	Golaghat ...	2	...	52	4	2	3	...
R. C. Hamilton, Esq. ...	} ,, ...	Jorhat ...	4	...	73	{ 2	... }	4	...
H. C. Barnes, Esq. ...	}					{ 9	2 }		
H. A. C. Colquhoun ...	Lakhimpur ...	North Lakhimpur.	1	1	20	6	...	13	4
	Total ...	...	14	1	288	125	25	31	13

The outturn of inspections during the year was disappointing. Out of the 312 mandals whose work was examined, Captain Gurdon, Mr. Nicholl, Mr. Playfair, and Rai Madhab Chandra Bardalai Bahadur accounted for 261. The balance (51) is the number of mandals whose work was inspected by the remaining 5 Deputy Commissioners and 3 Subdivisional Officers.

16. Full particulars of testing done by the Sub-Deputy Collectors will be found in Appendix D. Check-lines run independently and those run with other officers have been shown separately. During the year, the total length of check-lines run by these officers amounted to 582 linear miles, against 670 linear miles in the preceding year. Exclu-

Testing by Sub-Deputy Collectors.

ding lines run in surveying waste land grants and testing the demarcation of special estates, the total length of check-lines amounted to 469 miles, or 20 miles more than in the preceding year.

Babu Radha Mohan Das, of Nowgong, ran the greatest length of check-lines, 62·79 miles, but of this, 7 miles were run in surveying waste land grants. Next comes Munshi Faizuddin Ahmed, who ran 59·12 miles of check-lines, all of which were run in testing mandals' surveys. Babu Hem Chandra Goswami and Munshi Didaruddin Ahmad ran 55·48 and 53·40 miles of check-lines respectively, of which 28·72 and 19·87 miles, respectively, were run in surveying waste land grants and in testing the demarcation of special estates. A creditable amount of testing is shown by Babu Rajani Kanta Bardalai, of Gauhati (41·51 miles), and Babu Radha Kanta Handiqui. The outturn of testing in the Tezpur subdivision was not satisfactory. The length of check-lines run by Babus Sarat Chandra Lahiri and Ram Kumar Aditya was short, and that of Babu Janaki Nath Das very unsatisfactory. Babu Radha Mohan Das discovered 325 a[illegible] concealed cultivation.

Testing by supervisor kanungos and surveyors.

17. The testing done by the supervisor kanungos is shown in detail in [illegible] E. The total length of check-lines run by [illegible] during the year under report amounted to [illegible] miles, or 9·02 linear miles per square mile [illegible] fluctuating cultivation, as against 2,040·82 linear miles in the preceding year and 2,133·95 linear miles in 1896-97. The outturn is satisfactory.

Bhagirath Deka, of Roha circle, Barpeta, ran the greatest length of check-lines (125·74 linear miles) but of this 59·41 miles were run in testing extension survey. The greatest length of lines (97·71 linear miles) in cadastrally-surveyed area was run by supervisor kanungo Shibnath Sarma of the Majuli circle, Jorhat. Ratiram Das of Bijni, Goalpara, and Govinda Ram Datta of Dhing, Nowgong, ran 76·04 and 70·08 miles, respectively.

The length of check-lines run by the supervisor kanungos of the Boko, Baroma and Nalbari circles in Kamrup was below the prescribed minimum of 4 linear miles per square mile of fluctuating cultivation.

During my inspection tours, I found that the check-lines of Shi[illegible]Das of Beltola, Jagannath Deka of Bengbari, Ganga Ram Das, Manu Ram [illegible]ukdar of Tezpur, and to a less extent of Shibnath Sarma of the Majuli, were not always run in suitable places, and were in many cases useless as a means of testing mandals' surveys of new cultivation.

Testing by tahsildars, mauzadars, and tahsil muharrirs.

18. The testing done by tahsildars is shown in Appendix F, and that by mauzadars and tahsil muharrirs in Appendix G. The total length of check-lines run by tahsildars during the year under report was 168·86 miles, against 160·16 miles in the preceding year and 201·42 miles in 1896-97. The greatest length of check-lines (33·95 miles) was run by Babu Keshab Chandra Singh, of the Roha tahsil, Barpeta. The tahsildars of Hajo (Kamrup) and Jorhat tahsils ran 21·83 and 21·55 miles respectively. The tahsildars of the Nalbari tahsil, Kamrup, Samaguri tahsil, Nowgong, and Dibrugarh tahsil, did no testing whatever by check-lines. The testing done by the tahsildars of the Patidarrang tahsil, Kamrup, town tahsil, Nowgong, and sadr tahsil, Sibsagar, was insignificant. In testing without check-lines, satisfactory work was done by the tahsildars of Rangiya and Barama, but, with the exception of the Golaghat tahsildar, nothing was done by Sibsagar and Lakhimpur tahsildars. The record of Babu Padmanath Barua, tahsildar of Dibrugarh, is highly unsatisfactory. During the year he did not run a single check-line or test a single field in the cadastral area. It is not surprising if under these conditions the mandals of his tahsil are inefficient.

The naib-tahsildars of the Kanairghat and the sadr tahsils of the Jaintia parganas exercised a creditable amount of supervision over the work of patwaris by testing surveys in 180 villages, examining the papers of 42 patwaris, and running 8·10 miles of check-lines in all.

Check-lines aggregating 124·62 linear miles were run by mauzadars and tahsil muharrirs during the year, against 94·96 miles in the preceding year and 147·35 miles in 1896-97. The increase as compared with the last year, is noticeable everywhere except in the two subdivisions of the Kamrup district and the North Lakhimpur subdivision. A satisfactory improvement is noticeable in Nowgong, where the outturn increased from 9·27 miles in 1897-98 to 19·27 miles in the year under review.

19. The testing carried out during the last two years by District and Subdivisional Officers is shown in the following statement:

Testing by Deputy Commissioners and Subdivisional Officers.

District.	Subdivision.	Testing by check-lines.						Testing without check-lines.			
		Total area surveyed up to		Total area of fluctuating cultivation.		Linear miles of check-lines run.		Total area unsurveyed in		Area tested.	
		1897-98.*	1898-99†.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.
1	2	3	4	5	6	7	8	9	10	11	12
		Sq. miles.	Sq. miles.	Acres.	Acres.						
Goalpara ...	Dhubri ...	204·13	288·20	7,876	11,036	...	...	2,179·87	2,095·80	...	...
	Goalpara ...	...	...	...	...	...	...	1,570·00	1,570·00	...	...
Kamrup ...	Barpeta ...	548·22	548·22	19,103	18,726	3·76	7·90‡	677·78	677·78	179·59	121·05
	Gauhati ...	1,420·48	1,420·48	34,209	35,418	3·85	2·19	987·06	987·06	...	...
Darrang ...	Mangaldai ...	721·83	721·83	9,613	10,311	4·92	11·58	551·96	551·96	...	...
	Tezpur ...	256·01	256·97	5,262	5,375	9·82	...	1,891·75	1,884·79	...	...
Nowgong ...	Nowgong ...	1,108·39	1,108·39	44,420	43,215	2·12	...	2,152·06	2,152·06	...	...
	Golaghat ...	348·66	348·66	7,718	7,668	2·49	1·76	566·34	566·34	...	...
Sibsagar ...	Jorhat ...	677·65	677·65	7,664	8,826	4·39	1·52	240·36	240·36	16·44	...
	Sadr ...	683·80	683·80	7,126	7,062	...	0·28	306·20	306·20	...	...
Lakhimpur ...	North Lakhimpur ...	83·61	83·61	2,112	2,589	...	...	1,077·39	1,077·39	...	...
	Dibrugarh ...	215·19	215·19	3,418	2,836	2·14	0·13	2,347·81	2,347·81	12·17	63·41
Sylhet ...	North Sylhet ...	...	...	...	...	...	...	...	...	...	...
	Karimganj ...	...	...	...	...	...	...	...	...	...	...
Total ...	... ...	6,261·97	6,353·00	148,521	153,021	33·49	25·27	14,548·58	14,457·55	208·20	184·46

* This excludes the area surveyed by local agency in different districts during the year 1897-98.

† Ditto ditto ditto 1898-99.

‡ Of this, 1·16 miles were run by Babu Abhoy Sankar Guha, Extra Assistant Commissioner.

Out of the total length of check-lines run (25·27 miles), Lieutenant A. Playfair, Subdivisional Officer, Mangaldai (11·58 miles), and Rai Madhab Chandra Bardalai Bahadur, Subdivisional Officer, Barpeta (6·74 miles), accounted for 18·32 miles or over two-thirds of the total length run.

In Gauhati sadr, Golaghat, and Jorhat the outturn was small, in Sibsagar sadr and Dibrugarh insignificant, and in the other subdivisions of the province nothing was done.

Figures showing the testing carried out by the Deputy Commissioners and Subdivisional Officers during the past ten years are given in the margin.

Year.	Length of check-lines in miles.	Area tested without check-lines in acres.
1889-90 ...	1·84	3,539
1890-91 ...	...	1,436
1891-92 ...	7·29	390
1892-93 ...	13·25	448
1893-94 ...	12·77	527
1894-95 ...	29·41	254
1895-96 ...	55·69	840
1896-97 ...	29·59	173
1897-98 ...	33·49	208
1898-99 ...	25·27	184

20. In addition to the testing done by the district staff, the field surveys of mandals and patwaris were tested by the Superintendent of Land Records to the extent shown below:

Total testing done.

	Number of check-lines.		Number of *katans*.		Number of offsets.		Length of check-lines in miles.		Remarks.
	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	
1	2	3	4	5	6	7	8	9	10
Superintendent of Land Records ...	15	8	147	97	259	152	8·69	4·69	In extension survey.
	18	16	227	221	338	354	11·47	10·04	In professionally surveyed area.
Total	33	24	374	318	597	506	20·16	14·73	

In the following statement the total amount of testing done by the members of the district staff by means of check-lines in the cadastrally-surveyed area of each subdivision is compared with the total area of fluctuating cultivation.

District.	Subdivision.	Number of linear miles per square mile of fluctuating cultivation.			
		By Sub-Deputy Collectors.	By supervisor kanungos.	By tahsildars, mauzadars, etc.	By District and Subdivisional Officers.
1	2	3	4	5	6
Sylhet ...	North Sylhet (Jaintia) ...	29·22	37·49	8·10	...
Goalpara ...	Dhubri	8·76	6·10	0·57	...
Kamrup ...	Barpeta	1·43	8·70	2·46	0·23
	Gauhati	0·99	5·72	1·46	0·03
Darrang ...	Mangaldai	1·72	10·37	2·89	...
	Tezpur	1·08	7·01	1·57	...
Nowgong ...	Nowgong	0·64	6·45	1·20	...
Sibsagar ...	Golaghat	1·10	4·84	2·46	0·15
	Jorhat	2·08	9·99	3·42	0·11
	Sadr	2·78	9·91	2·03	0·007
Lakhimpur ...	Dibrugarh	1·74	10·40	3·39	...
	North Lakhimpur	2·13	10·93	0·14	0·01

Supervision of mandals and patwaris' office work by tahsildars and mauzadars.

21. Munshi Faizuddin Ahmed, Sub-Deputy Collector, while in charge of Bijni tahsil, Goalpara, supervised to a fair extent the office work of mandals, and the mauzadars did a good deal of testing in comparing *pattas*, checking calculation of areas and comparing mandals' abstract books with *dag chithas*. In Kamrup, a fair amount of testing of area, and revenue calculations, comparison of *pattas* with *jamabandis*, checking page totals, and checking abstracts in *jamabandis* and *dag chithas*, was on the whole done by the tahsildars, mauzadars and tahsil muharrirs. In this district the best outturn was that of Babu Keshab Chandra Singh, tahsildar of Roha, but the total failure of the tahsildar of Chhaigaon to do any testing is very discreditable. The tahsildars of Darrang, except Babu Bhabani Charan Sarma, tahsildar of the Patharughat tahsil, and all the mauzadars, except one, exercised due supervision over the office work of mandals. In Nowgong the work done in this direction by tahsildars, etc., though showing some improvement over last year, was insufficient, and shows considerable apathy on the part of these officers. The work done by the tahsildar of Samaguri was very insufficient. In the sadr subdivision of the Sibsagar district the two tahsildars tested the revenue calculation of 1,608 *dags*, compared 823 *pattas* with *jamabandis* and checked 322 page totals, besides checking some abstracts in *jamabandis* and *dag chithas*. The tahsildar of the Jorhat tahsil exercised a sufficient supervision over mandals' office work and the tahsildars of the two tahsils of the Golaghat subdivision tested the office work of mandals to a fair extent. The mauzadars and tahsil muharrirs of the three subdivisions of Sibsagar did a fair amount of work in this direction. Some testing of mandals' office work was done by the tahsildar of the Dibrugarh tahsil and the mauzadars of the two subdivisions of the Lakhimpur district. In Sylhet, the naib tahsildar of the sadr Jaintia tahsil, the only officer who did any testing of patwaris' office work, tested the area calculation of only 15, and the revenue calculation of only 45 *dags*—a very unsatisfactory outturn.

Registrar kanungos.

22. The registrar kanungos' offices at Sylhet (Jaintia), Barpeta, Mangaldai, Tezpur, Nowgong, Sibsagar sadr, Jorhat, Golaghat, North Lakhimpur and Dibrugarh, were inspected by me during the year under report. Since the close of the year, I inspected the registrar kanungo's office at Gauhati. The offices at Barpeta and Jorhat were found in good order and the condition of those at Mangaldai, Golaghat, Dibrugarh and North Lakhimpur was fair. Heavy arrears were found in the Sylhet and Nowgong offices, while at Tezpur and Gauhati the registrar kanungos were found totally incompetent, and their removal was advised. In Sibsagar serious inaccuracies were detected in a number of correction entries in the *jamabandis*.

The printed form of parwana to be issued to tahsildars and mauzadars was found to be in use everywhere except at North Lakhimpur.

Condition of survey marks.

23. The condition of survey marks as reported by the district authorities is shown in the statement, Appendix H; an abstract is given below:

—	Classification.	Total number (column 6+7 +8).	Total number found in good order by mandals or patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order on 30th June 1893.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
(a) ...	Trijunction prisms ...	12,427	11,689	359	141	12,048	238
(b) ...	Traverse stations, shown by mounds and *simul* boughs.	68,334	32,006	24,483	8,104	56,489	3,741
(c) ...	Kanungos' mounds, including jungle mounds.	8,803	4,214	2,771	1,277	6,985	541
(d) ...	Prisms on boundaries of grants, etc.	7,334	7,206	46	51	7,252	31
(e) ...	Concrete blocks on boundaries of grants, etc.	16,611	15,956	54	562	16,010	39
(f) ...	Country stones on boundaries of grants, etc.	20,784	19,918	80	167	19,998	619
(g) ...	Mounds on boundaries of grants, etc.	4,764	3,587	478	681	4,065	18
	Grand total	1,39,057	94,576	28,271	10,983	1,22,847	5,227

The condition of marks seen during the year by the Superintendent of Land Records and by the Sub-Deputy Collectors is shown below:

District or subdivision.	Inspected by Superintendent of Land Records.			Inspected by Sub-Deputy Collectors.			Total number inspected.		
	Total number examined.	Number with living trees.	Percentage with living trees.	Total number examined.	Number with living trees.	Percentage with living trees.	Total number examined.	Number with living trees.	Percentage with living trees.
1	2	3	4	5	6	7	8	9	10
Karimganj	...	...	...	365*	298	81·64	365	298	81·64
Dhubri	57†	55	96·49	727	701	96·42	784	756	96·43
Barpeta	105*	94	89·52	100	86	86·00	205	180	87·80
	44†	38	86·36	171	148	86·55	215	186	86·51
Gauhati	...	...	...	303*	192	63·36	303	192	63·36
	10†	9	90·00	16	16	100·00	26	25	96·15
Mangaldai	33*	33	100·00	891	868	97·42	924	901	97·51
	...†	...	...	33	32	97·00	33	32	97·00
Tezpur	37*	32	86·48	154	101	65·58	191	133	69·63
	...†	...	...	...	...	...	...	...	...
Nowgong	159*	143	89·93	1,064	761	71·52	1,223	904	73·92
	...	...	...	112†	46	41·07	112	46	41·07
Golaghat	22*	21	95·45	664	584	87·90	686	605	88·19
	...	...	...	75†	62	87·60	75	62	87·60
Jorhat	40*	37	92·50	633	531	83·88	673	568	84·39
	...	...	...	29†	22	75·86	29	22	75·86
Sibsagar sadr	21*	19	90·47	862	595	69·02	883	614	69·53
	...	...	...	67†	36	55·73	67	36	55·73
Dibrugarh	...	...	...	137*	123	89·78	137	123	89·78
	...	...	...	327†	314	96·02	327	314	96·02
North Lakhimpur ...	45*	44	97·70	648	510	78·70	693	554	79·94
	..	...	...	12†	12	100·00	12	12	100·00
Total	573	525	91·62	7,390	6,038	81·70	7,963	6,563	82·42

* In professionally surveyed area. | † In extension survey area.

Advances and recoveries on account of demarcation.

24. The statement in Appendix J shows the advances and recoveries made up to the 31st March 1899, and the balances outstanding on that date, on account of demarcation in connection with cadastral survey operations in each district. These advances have been grouped under the same heads as in the reports of previous years.

The year opened with outstandings amounting to Rs. 1,67,181, which by new advances increased during the year to Rs. 1,85,567. Of this Rs. 26,871 was recovered, leaving at the end of the year an outstanding balance of Rs. 1,58,696.

In estimating the progress made in recoveries, Cachar and the Sylhet *ilams* must be excluded from consideration, as in these areas no steps for the systematic recovery of outstandings can be taken until settlement operations have been concluded. At the beginning of the year Rs. 77,613 was outstanding, and during the year Rs. 15,851 was advanced in these areas. Of this only Rs. 116 was recovered. In the remaining districts of the province, therefore, Rs. 89,568 was outstanding at the beginning of the year and Rs. 2,534 was advanced during the year. Of the total amount (Rs. 92,102), for recovery, Rs. 26,755 was recovered, a very satisfactory increase on last year's recoveries (Rs. 5,230).

Of the total amount recovered during the year, Kamrup (Rs. 19,938) and Sibsagar (Rs. 5,427) account for Rs. 25,364, the small balance being distributed among the remaining districts.

In Goalpara, nothing could be done towards recovering outstanding advances pending the decision of the question of the liability of the Raja zamindars of the areas surveyed. In Nowgong the incidence per rupee of land revenue in the area surveyed in extension works out so high (over Rs. 8) that it will be necessary, it is anticipated, to apply to have the whole advances written off.

In Darrang, nothing could be done in the Mangaldai subdivision, as the accuracy of the demarcation of certain estates was doubtful, and it was necessary to have the work tested.

During my tours of inspection special attention was paid to this question in inspecting the offices of registrar kanungos. In Tezpur, owing to the ignorance of the registrar kanungo, I found the whole matter in conlusion, and in Sibsagar sadr, owing to the negligence of the registrar kanungo and the want of supervision on the part of the Sub-Deputy Collector, considerable delay had taken place in calculating the cost debitable to each estate.

In other subdivisions the demarcation registers were more or less correctly kept, and the subject appeared to have received attention.

CHAPTER III.

UTILISATION OF LAND RECORDS.

The mauza-book.

25. At the close of 1897-98, the mauza-book had been introduced in parts of the Sibsagar district. During 1898-99 it was introduced in all parts of the Sibsagar district, in the two subdivisions of the Lakhimpur and in the two subdivisions of the Darrang district. In all these subdivisions the mauza and village statements have been practically completed. I summarize briefly the progress made in each subdivision up to the end of the year, in classification work, crop experiments and sub-tenancy testing.

Sibsagar sadr.—Out of 625 villages, waterflow has been marked by the mandals in 351 villages and classification of *rupit* lands has been completed in 554 villages, of which 98 have been tested by the Sub-Deputy Collector and 209 by supervisor kanungos. Economic notes on 14 villages have been prepared and 95 crop experiments have been made. The Sub-Deputy Collector has neglected to test sub-tenancy entries and the kanungos' work in this direction is insignificant.

Jorhat.—Waterflow has been marked in 324 and classification carried out in 467, out of 577 villages, by the mandals. The classification of 132 villages has been tested by the Sub-Deputy Collector, of 193 by the kanungos; for 93 villages economic notes have been prepared, and 246 crop experiments were made. The outturn of testing sub-tenancy entries is very satisfactory. The excellent progress made in this subdivision is due to the energy of Babu Radha Kanta Handiqui.

Golaghat.—In 233 villages out of 345, waterflow has been marked and *rupit* classification completed by the mandals. The outturn of classification testing is unsatisfactory. In only 52 villages the classification was tested by the Sub-Deputy Collector and in 51 by the kanungos. Sub-tenancy entries were very insufficiently tested, and for only 29 villages were economic notes prepared. One hundred and thirty-four crop experiments were made. The Sub-Deputy Collector, Babu Sarat Chandra Lahiri, might have devoted more attention to the work.

Dibrugarh.—As the mauza-book was only introduced in August 1898, the remaining months of the year were occupied in writing up the mauza and village statements. A very fair outturn of sub-tenancy testing has been shown and a beginning has been made in classification work. One hundred and twenty-one crop experiments were made.

North Lakhimpur.—As the mauza-book was only introduced in January 1899, a beginning could not be made in classification work. No crop experiments under the mauza-book were made during the year.

Tezpur.—The classification of 54 villages was completed by the mandals before the close of the year. The Sub-Deputy Collector failed to test the classification of any village, the only work being performed by the kanungos who tested the classification of 30 villages. Thirty-four crop experiments were carried out.

Mangaldai.—The classification of 104 villages has been completed by the mandals. Of these 16 have been tested by the Sub-Deputy Collector and 43 by the kanungos. One hundred and seventeen crop experiments have been made.

In all, in the 2,930 villages of the three districts,—Sibsagar, Lakhimpur, and Darrang,—into which the mauza-book has been introduced, the mauza and village statements are practically complete, the *rupit* land of 1,430 villages has been classified and 747 crop experiments have been made. Sub-Deputy Collectors and kanungos have tested the classification of 837 villages and 1,595 sub-tenancy entries. In addition, economic notes have been prepared for 147 villages.

The progress made has been very satisfactory, and classification work, I have satisfied myself during my tours, is being intelligently carried out by the mandals. There can be no doubt that the statistics now being collected and the rough *rupit* land classification now being carried out will be of immense value as a basis of resettlement when the reassessment of the Assam Valley is taken in hand.

The experience of the past year, however, has suggested a number of improvements in the rules which have been incorporated in a circular issued by this Department since the close of the year.

The more important changes lie in the revision of the rules regarding the method of classifying and revising the classification of *rupit* lands, the exclusion of supervisor kanungos from the work of classification, the consolidation of the crop-cutting rules, the inclusion of provision for experiments of a special nature in selected villages and the introduction of rules to ensure the systematic record of information regarding the economic conditions of each village.

I desire to bring to the Chief Commissioner's notice the zeal and ability with which Mr. Basu, handicapped as he was by failing health, has worked during the year in introducing the mauza-book in the valley.

Cattle census.

26. Under the mauza-book rules a census of live stock, etc., was carried out during the last fortnight of March 1899 in the districts of Goalpara, Kamrup, Darrang, Sibsagar, Lakhimpur, and in the Jaintia Parganas. In Nowgong, the census was carried out in April. General instructions were issued and forms supplied by this Department in January and the actual enumeration was carried out by mandals and patwaris under the supervision of mauzadars, tahsildars, kanungos, and Sub-Deputy Collectors. In tea-gardens the enumeration was carried out by managers.

The attitude of the people towards the census was in places distrustful, as they suspected that the enumeration heralded a new tax. Deputy Commissioners report that a satisfactory amount of testing was performed by superior officers, and that the figures as returned, though perhaps not strictly accurate, are a great improvement on the old estimates.

Occasional failure.

27. During the year Mr. Lees, who had been placed on special duty in order to make enquiries into the damage caused by the earthquake in Nowgong and Kamrup, and into the cause of decrease of land revenue in these districts, submitted his report.

Mr. Lees' report on the damage caused by the earthquake was dealt with in Chief Commissioner's Resolution No. 2869R., dated the 3rd June 1898, and that on the causes of the decrease of the land revenue in Chief Commissioner's Resolution No. 5229-30R., dated the 8th November 1898.

The Chief Commissioner in the former Resolution directed that in the districts of Kamrup and Nowgong and in the Mangaldai subdivision of the Darrang district the assessment of *rupit* lands held under periodic lease at full rates which were damaged by sand deposits resulting from earthquake and floods of 1897 so as to be rendered unfit for the cultivation of transplanted rice, and which had not since been relinquished, should be reduced to *faringati* rates for the remainder of the term of the current settlement.

In the latter Resolution the Chief Commissioner accepted Mr. Lees' conclusions that the falling off in the settled area and land revenue demand in Nowgong, while due chiefly to natural causes (*kalá-ázár*, drought, and floods), was partly the result of defects in the administration and supervision of the land revenue system, and directed that special enquiries should, from time to time, be made in tracts where there was reason to believe that there was a loss of revenue owing to defects in the survey and settlement system.

Special enquiries in Nowgong.

28. In accordance with these orders, arrangements were made to hold during the last six weeks of the year special enquiries in every part of the Nowgong district. In the cadastral portion of the district 8 parties, each under the charge of a supervisor kanungo and consisting of 8 to 12 mandals, and in the non-cadastral area 6 parties each consisting of 4 to 8 mandals and under the charge of an experienced mandal were formed. In these parties over 100 mandals were employed.

The programme of work consisted in a second revision of the *faut ferar* list of the previous year, and in an attempt to discover every case of concealed cultivation and under-classification of lands. As in the non-cadastral area, it was impossible without a survey to detect cases of concealed cultivation, a plane-table survey of every considerable block of occupied land was undertaken. During the enquiries over 12,000 *bighas* were so surveyed.

The enquiries resulted in an immediate gain in revenue of Rs. 7,435, made up as follows:

	Rs.
Revenue on 2,603 *bighas* of concealed cultivation in the cadastral area ...	2,340
Revenue on 1,704 *bighas* of unassessed land in the non-cadastral area...	1,346
Revenue obtained from the correct classification of 11,262 *bighas* of land found wrongly classified	3,749
Total	7,435

Indirectly, the revenue gained considerably by these enquiries. In preparing the papers of the supplementary settlement the mandals, aware that, on the completion of the settlement these special enquiries would be commenced, made every effort to bring under assessment all unassessed occupied land. As a result, the *dariabadi* of the current year exceeded by Rs. 8,690 that of the previous year.

Incidentally the enquiries provided a valuable training in practical surveying to a number of unqualified mandals.

The *faut-ferar* lists which had in the previous year been rigidly scrutinised by the kanungos, by whom 5,000 *bighas* were excluded, were again revised, but were found as nearly as possible correct. The working parties were organized by and the enquiries conducted under the immediate supervision of the senior Sub-Deputy Collector of the district, Babu Radha Mohon Das, B.A., to whom the success of the enquiries is mainly due.

CHAPTER IV.

SCIENTIFIC AND NATIONAL ENQUIRY UNDER IMPERIAL CONTROL.

Meteorology.

29. The system of rainfall registration remained the same during the year under report. The total number of registering stations in the province was 113 on the 31st March 1899, against 107 in the preceding year. In accordance with the orders conveyed in letter No. 965Misc., —781R., dated the 11th March 1897, a separate report on the registration of rainfall has been submitted to the Secretary to the Chief Commissioner.

Economic products. Index collections.

30. At the instance of the Reporter on Economic Products to the Government of India, specimens of the following articles for the index collections for the Imperial Institute and Indian Museum were forwarded to him:

Albizzia stipulata	...	...	Young branches with leaves.
Acampe popillosa	...	...	Plants.
Acorus calamus	...	...	Leaves and root stock.
Altingia excelsa	...	...	Resin.
Aleurites moluccana	...	...	Botanical specimen.
Andropogon sorghum	...	...	Grain, liquor, and botanical specimen.
Cæsalpinia sappan	...	...	Pods and bark.
Gardenia campanulata	...	...	Botanical specimen.
Lapotia crenulata	...	...	Ditto.
Leucas linifolia	...	...	Dry leaves and twigs.
Lilium giganteum	...	...	Botanical specimen.
Mæsa indica	...	...	Leaves and berries.

Steps have also been taken to procure for the same purpose specimens of twenty-three other plants.

Commercial collections.

After the identification of the *Teri* plant of Sylhet, mentioned in the "Monograph on Dyes and Dyeing in Assam" as *Cæsalpinia digyna*, a requisition for 50 lbs. of its pods was received from the Reporter on Economic Products. He was furnished with 22lbs. only, and arrangements to supply the balance were made. At the desire of the Reporter on Economic Products, steps have been taken to obtain all available information regarding the lac industry of Assam, and to collect samples showing the various stages of the industry.

The following dye-producing trees and plants mentioned in the "Monograph on Dyes and Dyeing in Assam" but not scientifically identified at the time of its issue, were identified during the year in addition to those enumerated in the report for 1897-98:

Scientific names.				Vernacular names.
Hibiscus cannabinus	...	...	...	*Maragach.*
Indigoferra tinctoria	...	...	...	*Niri.*
Phyllanthus reticulatus	...	...	...	*Pansekatilata.*
Fibraurea	...	...	...	*Khoikhu.*

The last named plant has only been partially identified.

At the special request of the Reporter on Economic Products to the Government of India, the following plants were forwarded to him:

Zanthoxylum budrunga	Botanical specimen and half a maund of its bark.
Eleusine coracana	Seeds.
Perilla ocimoides	Seeds and oil.
Æschynomene aspera	Specimen of pith.

Steps have also been taken to supply that officer with 30 lbs. of the seeds of *Camellia drupifera*.

In the course of complying with the requisitions of the Reporter on Economic Products, the existence of the following plants has been discovered in the province:

Crotalaria juncea	*Heptapleurum hypoleucum.*	
Chenopodium album	*Amoora rohituka.*	
Juglans regia	*Bœhmeria nivea.*	
Rœhmeria platyphylla.	*Æschynomene indica.*	
Fleurya inturrupta	*Sesbania paludosa.*	
	Eurya japonica.	

The following plants were also identified in connection with the revision of the list of field crops grown in Assam:

Eleusine coracana	*Khasi,*	*U Kraitruh.*
Paspalum sanguinale	„	*Raishang.*
Setarea italica	„	*Raisoh.*
Coix lachryma-jobi	„	*Sohriw.*

The Political Agent in Manipur and Superintendent of the State sent botanical specimens of a fruit tree known in that locality as *Molhei*, which was identified as *Prunus armeniaca*. Dry roots and bark of the plants *Gandamatri* and *Cassia* were also supplied by this Department for identification.

Dr. Watt's Hand-book on *Rhea* referred to in the report for the previous year was received during the year.

Chakamara.

Six seers of fibre of the wild jute found in the Nowgong district, and commonly known there as *Chakamara*, which has been finally identified as *Melachia corchorifolia*, were supplied to the Reporter on Economic Products to the Government of India. A further demand for a maund more of this fibre was made by that officer, but could not be complied with. The fibre will be supplied during the current year. So far as could be ascertained, this plant is reported to be really wild, and it is not used by the people.

Veterinary science.

31. The statement below shows the number of deaths among cattle reported from the several districts of the province during the past two years, and the causes to which they are attributed:

1	2		3		4		5		6		7		8		9		10	
District.	Rinderpest.		Foot and mouth disease.		Swelling of mouth and throat.		Diarrhœa, dysentery and cholera.		Anthrax.		Catarrh.		Other diseases.		Total.		Estimated value of cattle.	
	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.	1897-98.	1898-99.
																	Rs.	Rs.
Cachar	163	21	198	184	693	356	952	1,594	1	7	1	...	65	49	2,073	2,211	39,664	41,009
Sylhet ...	5,743	5,753	2,440	2,434	6,178	11,110	4,729	8,024	27	41	998	926	11,593	12,031	31,708	40,319	3,03,683	3,18,218
Goalpara ...	7,487	760	6,181	3,238	4,385	1,206	3,824	1,216	...	329	2,669	1,008	35,704	12,947	60,250	20,704	4,29,024	89,110
Kamrup ...	5,717	4,558	14,788	10,059	18,009	5,863	24,341	9,288	...	...	...	...	15,400	8,902	78,255	38,670	5,93,255	2,93,768
Darrang ...	2,997	875	2,933	782	432	246	4,967	664	58	101	118	22	2,336*	2,489	13,841	5,179	1,03,042	35,644
Nowgong ...	720	487	4,325	3,658	813	1,273	2,579	670	...	...	...	...	4,284	2,059	12,721	8,147	1,01,768	65,176
Sibsagar ...	3,475	5,350	3,422	1,380	1,213	1,747	6,742	9,055	108	181	108	75	4,894	4,299	19,962	22,087	2,47,924	2,46,820
Lakhimpur ...	34,684	4,961	213	128	2,296	...	646	461	81	3	...	...	2,772	2,517	40,692	8,070	4,06,920	80,700
Naga Hills ...	...	...	...	...	...	...	...	1,200	...	...	...	...	...	...	...	1,200	...	18,000
Khasi and Jaintia Hills *...	...	...	30	...	...	...	38	83	...	...	...	...	...	...	68	83	320	1,148
Garo Hills † ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	60,986	22,765	34,530	21,863	34,019	21,801	48,818	32,255	275	662	3,894	2,031	77,048	45,293	259,570	146,670	22,26,478	11,89,593

* Statistics are available for Shillong and the neighbouring villages only. | † Information not available.

Taking the province as a whole, there was a very satisfactory decrease in the total number of deaths during the year, as compared with the preceding year. The only districts which showed an increase were Cachar, Sylhet, Sibsagar, and the Khasi and Jaintia Hills. The increase in Sylhet and Sibsagar is marked, and in the other two districts slight. A satisfactory decrease is noticeable in Goálpara, Kamrup, and Lakhimpur. Figures of cattle mortality have, for the first time, been received during the year from the Naga Hills district, at the headquarters station of which there was a severe outbreak of cattle disease during the year. As noticed in the concluding portion of paragraph 28 of the report for 1897-98, the services of a qualified Veterinary Surgeon have been secured through the Civil Veterinary Department, Bengal, for employment under the Dibrugarh Local Board. He is now under orders to join at Dibrugarh.

Insect pests. *Trichosphaeria Sacchari.*

32. An enquiry was made during the year at the request of the Government of India, conveyed in their Revenue and Agricultural Department letter No. 19—45-13, dated the 18th November 1898, as to the existence of the sugarcane disease known as *Trichosphaeria Sacchari* in Assam, and how far, and with what success, remedial measures are adopted, and the result reported to the Secretary to the Chief Commissioner. From enquiries made, it was found that the disease was generally unknown in the province. In the Barpeta subdivision, however, two kinds of disease affecting the sugarcane crop exist, which seem, from the description given by the Subdivisional Officer, to be forms of the fungal disease in question. Mr. Basu also reports the prevalence of a new fungal disease which has been causing some damage to the sugarcane crop in the Mangaldai subdivision. The identity of these diseases with *trichosphaeria sacchari* cannot, however, be established without an expert's examination. No remedial measures are known to the raiyats.

Statistics. Agricultural and Fiscal Statistics.

33. These returns were compiled, as usual, in this Department, and submitted in Return XLIB, on the 4th October 1898. The estimates of the areas under different crops in the permanently-settled tracts of the province for the purposes of Table A-3 of the Return are now being obtained for the first time, and will be utilized in the next return, to be submitted during the current year.

Trade Statistics.

34. The quarterly and annual reports on the rail and river-borne trade of the province were issued as usual, and a note on foreign trade was drawn up for incorporation in the Annual General Administration Report.

There was no change in the number of river traffic registration offices, *viz.*, Dhubri, Bhairab Bazar and Maulvi Bazar (Noakhali). The river traffic registration office at Dhubri was inspected by Mr. Henniker during the year under report.

Mineral Statistics.

35. The return of mineral statistics was prepared in this Department from information received from district officers, and submitted on the 15th March 1899.

Experimental crop cuttings.

36. A note on the results of experimental crop cuttings carried out during the year is under preparation, and will be submitted separately as usual.

Returns of prices-current and wages.

37. As usual, the following returns were compiled by this Department:

Weekly return of retail prices-current of food-grains and salt for publication in the *Assam Gazette.*

Fortnightly return of retail prices-current of foodgrains and salt for submission to the Government of India in the Department of Finance and Commerce.

Fortnightly return of wholesale prices-current for submission to the Director General of Statistics.

Half-yearly return showing the average wages of agricultural labourers, etc., for submission to the Government of India in the Department of Finance and Commerce.

CHAPTER V.

SCIENTIFIC AND LOCAL ENQUIRY UNDER PROVINCIAL DIRECTION.

38. *Experimental farm at Upper Shillong.*—At the close of 1897-98, out of 5 acres of land cleared and broken up, one-fourth of an acre had been planted in February and March 1898, with various varieties of potatoes. Owing to the fact that the poverty of the soil was not appreciated and the necessity for heavy manuring not understood, a large proportion of the setts failed to germinate, and the outturn, except of the Nainital and Australian varieties, was insignificant.

Potatoes.

The whole of the outturn was stored and used as seed at the next sowing. Chiefly in March 1899, but partly in October last and partly since the close of the year, 1½ acres have been planted with the following varieties:

Windsor Castle, Triumph, Harbinger, Early Regent, Nainital, Australian, and local.

The total quantity of seed used was over 20 maunds. The land sown has been liberally manured with cowdung and partly dressed with vegetable mould. To guard against the possible appearance of the dreaded potato blight, an Eclair vaporiser was purchased, and the crop sprayed twice with Bordeaux mixture. The result has been most satisfactory. In plots treated with the mixture the outturn was double that of plots purposely left unsprayed. The crop has germinated well, and no trace of blight has appeared. At the time of writing, the harvesting of the crop is nearly finished, and close on 100 maunds have been obtained, a most gratifying result in a year when rot and blight are common everywhere in these hills.

The greater part of the outturn will be distributed through the Deputy Commissioner to respectable Khasi cultivators.

An area of about 3 poles was sown with English rye. The crop grew fairly well, showing a bushy and spreading growth. The plants flowered irregularly throughout the rains, but did not produce any grains. Eventually, the crop was cut and given to cattle. Mr. Basu thinks that rye could easily be grown as a fodder crop, but that the indigenous maize and Khasi pulse, which yield heavier cuts, are superior.

Rye.

Seeds of two English varieties (Tartarian and Lambs' cluster) were sown at the end of April on 8 poles of land. Both varieties grew well and flowered, but produced very little grain. A second, sowing was made on 12 poles of land at the end of October. The crop germinated well, but during the cold winter months made little growth.

Oats.

Towards the end of February, however, the crop began to come up in fresh vigour and at the end of June looked exceedingly promising, being over 4 feet high, with a large number of ears. The crop was cut and the outturn was ninefold. As a valuable fodder crop, oats can easily be grown, but the ears are small, and it is still doubtful if as a grain crop oats can be successfully grown in these hills.

The first sowing was made in March 1898 on 8 poles of land. The seed germinated well, but the plants were sickly, probably for want of manure, and on the approach of the rains were attacked by blight and gradually died away. A second sowing was made in October last on well-manured soil. After germination the plants made little growth during the winter months, but towards March began to grow more vigorously. Since the close of the year another plot has been sown and has grown well. Both plots, however, have been attacked by an insect blight. Kerosine emulsion is being used, and I am in communication with Dr. Watt regarding the identification of the pest.

Lucerne.

Khasi pulse was grown as a fodder crop on an area of 24 poles. The outturn was at the rate of 65 maunds per acre, an unsatisfactory yield, due no doubt to the poverty of the soil. Both for summer feed and for silage, Mr. Basu thinks very highly of this crop.

Khasi pulse.

During the year an interesting experiment was made with a view to ascertain how far the wild grasses of these hills could be utilized as silage. A small pit silo was made and filled in July 1898 with 160 loads of grass at a total cost of Rs. 37-13-9 (construction Rs. 11-13-9, cutting grass and filling silo Rs. 26). The silo was opened in December, and the silage used to feed

Silage.

the farm cattle until the end of January. The silage was found to be of fairly good quality, and was eagerly eaten by the cattle.

This experiment disposes to a great extent of the difficulty of feeding milch cows in winter anticipated by Mr. Keventer. The supply of wild grasses is practically unlimited, and by utilizing them as silage the necessity of growing fodder crops is avoided.

Fruit trees.

With the object of encouraging horticulture in the district a tree nursery was started last year. The nursery now contains 260 cuttings and seedlings of European and Khasi pears, vine, peach, plum, and apple. The European are being gradually grafted on to the Khasi varieties.

Failures.

In addition to the crop already described, unsuccessful attempts were made to grow wheat, barley, carrots, maize, gram, pease, turnips, swedes, mangel wurzels, and Sikkim paddy. The crops in almost every case germinated well, but failed to make any considerable growth, owing to the poverty of the soil. In the present year failure has to a great extent been avoided by the liberal application of manure, and in the case of Sikkim paddy by the application of lime.

Dairy.

Chiefly with the object of providing a constant supply of manure, which experience has shown is absolutely necessary, a dairy was started during the year. The present strength of the dairy head is 15 milch cows, 14 calves, and 2 heifers. Since November the average daily yield of milk has been about 10 seers and the income from its sale about Rs. 50 per mensem.

The receipts and expenditure up to March 31st 1899 are given below:

Receipts.			Expenditure.		
	Rs.	a. p.		Rs.	a. p.
Sale of milk ...	311	14 11	Purchase of 14 cows ...	441	0 0
			Expenditure of dairy ...	14	11 4
			Cost of feeding (including cost of silo).	214	15 3
			Wages of cowherd and milk-seller.	110	4 3
				780	14 10

As during the winter months, the cost of feeding is disproportionately heavy, it is safe to anticipate that the dairy will be almost self-supporting during the present year.

Receipts and expenditure.

The total receipts from the farm during the year amounted to Rs. 315-6-11, made up (all but Rs. 3-8-0) of the income from the sale of milk. The expenditure amounted to Rs. 2,600-11-11 made up as follows:

	Rs.	a.	p.
Dairy account	780	14	10
Farm Superintendent's pay	480	0	0
Cost of breaking up new land and draining	224	13	0
Labour of cultivation	630	0	8
Seeds and grafts	166	3	6
Appliances	3	8	0
Cost of sheds	233	13	5
Manure	25	0	0
Furniture (one table)	20	0	0
Miscellaneous	36	6	6
	2,600	11	11

The expenditure was met out of the following grants:

	Rs.
Original grant for the farm	2,000
Grant for other experiments	280
Transfer from grant under crop experiments	360
Total	2,640

At the time of writing, the following crops are being grown at the farm:

	Acre.	rood.	poles.
Potatoes (seven varieties)	1	1	34·3
Sohphlong (catch crop)	1	0	0
Oats (two varieties)	0	0	12
Sikkim paddy ... ... } Khasi paddy ... ... }	0	2	32
Lucerne	0	0	11
Sorghum	0	0	16
Linseed	0	0	32
Maize	0	1	14
Russian sunflower	0	0	20
Khasi pulse	1	0	12
Field turnip	0	0	5
Swede	0	0	6
Field beet	0	0	6
Mangel wurzel	0	0	3
Carrot	0	0	4
Sweet potato	0	0	12
Tobacco	0	0	8
Vegetables	0	0	26
Pumpkins	.....		

39. *Seed distribution.*—Thirty seers of imported seed potatoes (Nainital, Windsor Castle, Triumph, Harbinger and Early Regent) were distributed among 7 persons, six of whom were Khasias. In addition, 16 maunds 23 seers of Nainital seed potatoes raised by Mr. Job Solomon from seed supplied to him by this Department were sold by him to ten Khasia cultivators, by whom the results of the cultivation have been reported. Mr. Job Solomon himself used 6 maunds 30 seers of his own seed in his own cultivation at Shillong.

Potatoes.

The maximum outturn obtained by the experimenters from each kind of seed in number of times the quantity of seed used was:

Nainital (Job Solomon)	10-Fold
Calcutta	10 „
Windsor Castle	7 „
Triumph	5 „
Harbinger	4 „
Early Regent	3 „

The imported varieties, it is anticipated, will give better results in the second year of cultivation. The Farm Superintendent reports that the whole produce of the imported seeds was reserved by the experimenters for replanting.

Paddy.

Four maunds of Sikkim seed paddy of four varieties (Brimphul, Marsara, Rantulsi, and Roodhoowa) were obtained from the manager of the Government estate at Kalimpong, Darjeeling. Forty-four seers (11 seers of each kind) were distributed among nine cultivators in the Khasi Hills and 5 seers were sent to Mr. Rita, Subdivisional Officer, Jowai.

In five out of the nine places in the Khasi Hills where the seed was grown the result was a failure, but in the remaining four places the outturns obtained by the experimenters, if they have been correctly reported, must be regarded as highly satisfactory. Allowing one maund of seed paddy to the acre, the outturn obtained would amount to from 20 to 30 maunds per acre, and in one case actually to 40 maunds. As the whole produce is reported to have been reserved for sowing, it will be possible to verify these figures this year. Mr. Rita's experiment was not a success. Sikkim paddy, the successful introduction of which would be of the greatest benefit to the district, is at present being successfully cultivated at the Farm. Thirty-two poles have been sown broadcast and about 48 poles with transplanted seedlings.

Sisal Hemp.

40. In the Departmental Report for 1896-97, mention was made of an interesting experiment which was then in progress in the cultivation of sisal hemp (*Agave rigida, var. Sisalana*) on the Duaracherra tea estate in South Sylhet. During my cold-weather tour, I visited the garden, and am now in a position, through the courtesy of Mr. Hunter, one of the proprietors, to publish some valuable information on the results obtained. The plant has been cultivated, not as a garden curiosity, but as a serious commercial experiment. At present 12 acres have been planted out.

In 1893, the Agricultural and Horticultural Society of India received for distribution in India 2,000 young plants or suckers from Kew, imported from the Bahamas. As there is an embargo on the export of these plants in the Bahamas, the plants were obtained through the agency of the British Foreign Office.

Only 200 survived the journey, and of these 30 were received at Duaracherra. The young plants did so well that a further supply was procured, not without considerable trouble, from America. The long journey had a most injurious effect on these young plants, and it was only by the exercise of the greatest care that they were brought to maturity.

It has taken over five years for these plants to attain full size; although there are on the garden plants two years younger, equally advanced and ready for harvesting.

At Duaracherra, from 500 to 600 plants go to an acre, as it is necessary to allow sufficient space between the plants to permit bullocks to carry away the heavy harvested leaves. Although the plants have not yet been systematically cut, Mr. Hunter reports that from leaves hand-cleaned 4 per cent. of dried fibre is obtained, and estimates an outturn of 12 cwt. per acre. The percentage of fibre agrees with that obtained in other parts of the world, but Mr. Hunter's estimate of outturn is slightly in excess of that generally accepted for Yucatan and the Bahamas, which is generally taken at half a ton per acre.

A sample of the Duaracherra fibre was submitted during the year through this department for expert's opinion, and the opinion received is so interesting that I make no apology for quoting it in full.

> This is the first sample of sisal hemp produced in India that we have seen, and it closely resembles the same hemp which is largely exported from Mexico, excepting that the Indian product is shorter in the staple. The hemp is well prepared, of good colour and strength. Owing to the war in the Philippines, there has been a heavy advance in Manilla hemp and sisal hemp has moved up in sympathy. In our last London report dated the 10th ultimo, the latter fibre is quoted at £ 35 per ton, equal to, say, Rs. 16 per maund landed in Calcutta. We cannot quite say what hemp like the sample would fetch at home, but we think it would realise a good price, and we shall be very glad to send a sample home for report and valuation in London.

The plant is a hardy one, easily cultivated, and seems to grow anywhere except in damp and undrained land, and the comparatively wide spaces between the lines make it possible to grow catch crops, such as *dhal*, while the young plants are attaining maturity. The only obstacle to planting out any considerable area is the difficulty of procuring plants.

Mr. Hunter does not think it would pay to import plants, and is of opinion that plants locally raised must be used. The plant is propagated in two ways, either from young plants or suckers thrown out by the parent root or by seeds or bulbils furnished

by the pole when the plant is allowed to run to seed. Each pole will produce from one to two thousand young plants, but after seeding the parent plant dies, and it takes a bulbil nearly a year to attain the size of a first-year sucker.

Mr. Hunter anticipates that in another year there will be sufficient seedlings at Duaracherra to plant out if necessary from 500 to 600 acres. The plants would be ready for the first cutting in their fourth year.

Mr. Hunter estimates that, exclusive of initial outlay, the fibre can be produced at less than £10 per ton. He does not think that, carried out on a fairly large scale the initial outlay (*i.e.*, until the plants are brought into bearing) should exceed Rs. 200 per acre.

If Mr. Hunter's estimate of the cost of production (less than £ 10 per ton) be correct, it seems clear that, even with a market more depressed than at present, there is a very considerable margin of profit, and that, planted out on a sufficiently large scale, there is a future before sisal hemp cultivation in Assam.

Rhea (*Boehmeria Nivea*).

41. During the year Mr. Lawrie, of Chotajan tea estate, Golaghat, commenced an interesting experiment in the cultivation of rhea (*Boehmeria Nivea*). At intervals from May till December roots were planted on ridges on a plot 3 acres in area which had been thoroughly broken up and manured, 2 to 2½ maunds of roots being used to plant out an acre. The patch was first cut on September 2nd and again on October 28th.

As was expected in the first year, so soon after planting, an insignificant yield (one maund of fibre) was obtained.

The stems were decorticated by a "Faure's" machine, one of which Mr. Lawrie has erected in the factory. Mr. Thos. Barraclough, the well known expert, to whom a sample was submitted for opinion, speaks very highly of the quality of the fibre turned out by Mr. Lawrie, which he values at £ 22 per ton.

During the present year, when the plants on the plot experimented upon have thickened, and when from systematic cuttings a reliable estimate of the outturn per acre can be made, Mr. Lawrie hopes to be in a position to decide finally the vexed question regarding the possibility of growing rhea at a profit in Assam.

Other fibre-yielding plants.

42. In addition to the area planted with sisal hemp at Daurachera, 50 acres have been planted with other foreign fibre-yielding plants, *viz.*, *Agave Mexicana*, *Agave vivipara* (Manilla aloe fibre) *Furcræa gigantea* (Mauritius hemp) and *Musa textilis* (Manilla hemp). Mr. Hunter reports that the first three all yield a very fair fibre, but inferior to that obtained from the Sisalana variety and fetching from £ 2 to £ 3 per ton less. The Manilla hemp (*Musa textilis*) has grown luxuriantly, but the fibre obtained was weak and without lustre.

Jute.

43. At Margherita an experiment in jute cultivation was made by a Dacca man. Though the yield was not returned, the cultivator was satisfied with the result, and it is reported that he intends to extend his cultivation this year. Samples of the fibre and seeds were forwarded to the Reporter on Economic Products for expert's opinion. The fibre was pronounced good and suitable for the manufacture of Hessians, and its value estimated at Rs. 5 a maund. Towards the close of the year, two seers of Serajgunge jute-seed were obtained for one Gonesh Ram Phukan, of Dibrugarh, for experimental cultivation in the Majuli tracts of the Sibsagar district.

Potatoes.

44. One maund of the Khasi seed potatoes was supplied to the Superintendent of the Nowgong Jail for experimental cultivation. They were all sown in the jail garden, but the outturn (1 maund 27 seers) was very unsatisfactory. This is reported to be due to the partial destruction of the crop by red ants. The result of the potato cultivation in the experimental farm and by the several Khasia cultivators to whom different varieties of seeds were distributed are noticed in paragraph 39.

Khesari (*Lathyrus Sativus*).

45. With a view to encourage the cultivation of cold-weather crops, which are usually grown in Bengal on flooded lands, five maunds of the Khesari seed obtained through the Director, Department of Land Records and Agriculture, Bengal, were distributed among a number of educated Assamese gentlemen and cultivators in the sadr subdivision of the Sibsagar district for experiment. From the report received, it appears that the seeds

which were sown in the first part of October, were entirely destroyed by the heavy rains which set in.

Castor seed.

46. At the request of Babu Debeswar Goswami, of Badlipar (Sibsagar), 9¾ seers of castor seeds of two varieties (large and small) were obtained from the Dumraon Experimental Farm, and supplied to him for experimental cultivation. With these seeds, 4 *bighas* of land were planted. Most of the seeds germinated, but all the plants of the large and three-fourths of the small variety withered away within two months. The few that survived were of stunted growth, and never exceeded 3 feet in height. None of the plants bore more than 3 chittaks of seed, and the total outturn was estimated at about 5 seers. The experiment cannot be considered other than a failure.

Tobacco.

47. Ten seers of tobacco seeds were procured from the North-Western Provinces through the Superintendent, Royal Botanical Garden, Calcutta, and supplied to the Deputy Commissioner, Kamrup, for distribution to a few tahsildars for experimental cultivation in the district. It is reported that the experiment proved a total failure. The Superintendent of the Gauhati Jail, who was also supplied with some of these seeds, reports that the plants which germinated were destroyed by rain.

Fruit trees.

48. The citron plantation at Therriaghat was again badly damaged by the floods of June 1898, which destroyed 25 trees and covered 30 others with sand. The produce of the year was so insignificant that no opinion as to any medicinal properties the fruit might possess could be formed. Since the close of the year a sum of Rs. 22 has been spent in clearing and fencing the plantation.

Four mango and two *lichi* grafts obtained from the Agricultural and Horticultural Society of India were planted in the compound of Nongpoh dâk bungalow. Of these, two mango and one *lichi* were killed by white-ants. The remaining two mango, as well as two grafts supplied by the Deputy Commissioner, Khasi and Jaintia Hills, and one *lichi* graft are now reported to be doing well. The plants are under the care of the khansama of the dâk bungalow.

Agricultural implements and machines.

49. Under the orders of the Government of India conveyed in their Circular No. 13—72-16, dated the 3rd May 1899, in the Department of Revenue and Agriculture, the submission of a separate list of agricultural implements and machines tested in the province during the year has been discontinued. I have no addition to make to the list, except to mention that an Eclair Vaporiser was used with success during the year under report in the Upper Shillong Experimental Farm.

Breeding bulls.

50. At the commencement of the year there were five breeding bulls in the province, one at each of the stations of Silchar, Haflong, Sylhet (Jaintia), Naharjan Tea Estate (Sibsagar), and Shillong. The statement below shows the cost of feed and keep of these animals and the successful coverings by them :

District.	Locality where the bull is stationed.	Wages of keeper.	Cost of food.	Miscellaneous.	Total.	Number of successful coverings during 1898-99.		
						Male.	Female.	Total.
1	2	3	4	5	6	7	8	9
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.			
Cachar ...	Silchar ...	96 0 0	70 7 5	31 1 0	197 8 5	10	7	17
	Haflong ...	60 0 0	105 3 6	...	165 3 6	11	12	23
Sylhet ...	Haripur (Jaintia).	103 6 6	90 2 3	46 3 0	239 11 9	4	3	7
Sibsagar ...	Naharjan Tea Estate.	...	60 0 0	...	60 0 0	*	*	*
Khasi and Jaintia Hills.	Shillong ...	144 0 0	141 10 6	21 0 0	306 10 6	5	3	8
Total	...	403 6 6	467 7 8	98 4 0	969 2 2	30	25	55

* Information not available.

No account was kept of the coverings by the bull stationed at Naharjan Tea Estate, but Mr. Bivar, the manager of the garden, reports that full use was made of the animal during the year. As noticed in the concluding portion of paragraph 44 of last year's report, two Sitamarhi bulls of small size were procured through the Superintendent, Civil Veterinary Department, Bengal, for the North Lakhimpur Local Board, and were received there in January last. Seven cows were served from January to 31st March 1899 by one of the bulls, which was kept in charge of a tea-garden manager.

CHAPTER VI.

AGRICULTURAL EDUCATION.

Agricultural education.

51. Mr. Monahan's manual on mensuration and surveying mentioned in paragraph 45 of last year's report is now in the Press, and will shortly be issued. Arrangements for the translation of the work into Bengali and Assamese will shortly be made.

CHAPTER VII.

PUBLICATION OF AGRICULTURAL INFORMATION.

Weather and crop reports and mustard forecast.

52. The weekly weather and crop reports were, as usual, prepared in this office for publication in the Gazette. The preliminary and final forecasts of the mustard crop were prepared and forwarded to the Director General of Statistics.

Information obtained from circle books and District Officers.

53. The system of maintaining "Circle or mauza books," which was introduced in the Sibsagar district during the past year, was extended to the districts of Darrang and Lakhimpur during the year under report, and will shortly be introduced in Kamrup and Nowgong. No information of special interest bearing on agriculture was received from District Officers or officers subordinate to them during the year under report.

The ledger system.

54. Ledger collections are now being maintained in a systematic way, in accordance with the revised classification of the different subjects prescribed by the Government of India. Some new collections were opened during the year.

Publication of special works.

55. During the year the Department published no special works of economic interest. Mr. Basu was, however, engaged in collecting materials for a monograph on the varieties of rice grown in the Assam Valley, a laborious undertaking which it will take two years to complete. He also collected some information regarding wild plants the fibres of which are utilised for domestic and agricultural purposes in the Assam Valley. As the result of his enquiries regarding the crops grown in this province, Mr. Basu has recently submitted a note containing suggestions for the revision of Bulletin No. 2 of this Department (Names of Field Crops grown in the Province of Assam). This note has been sent to the Reporter on Economic Products for his opinion and advice, and the action taken will be noticed in next year's report. Mr. B. C. Allen, I.C.S., is now engaged in writing a monograph on the silk fabrics of Assam.

Papers communicated to the Agricultural Ledger.

56. A list of papers communicated to the Reporter on Economic Products, through the agency of this Department, for incorporation in the Agricultural Ledger, is given in Appendix K.

Papers received from, and communicated to other Provincial Departments.

57. Monograph on woollen fabrics from Madras and North-Western Provinces and Oudh, a copy of Central Provinces Bulletin No. 2 of 1897 on *Al* Dye-morinda, and a copy of Bulletin No. 2 of 1898 on cotton cultivation in Berar or the Hyderabad Assigned Districts, and copies of Annual Reports of the different Provincial Departments, were received during the year. Agricultural Bulletin No. 4 of this Department, on the cultivation of black pepper in Assam, and No. 5 on the staple crops of the Khasi and Jaintia Hills, and the Annual Report of this Department were distributed to the Departments of Land Records and Agriculture of other provinces from the Secretariat.

CHAPTER VIII.

FINAL.

58. The following statement gives details of the expenditure incurred by this Department during the year, and compares the figures with those of the previous year :

Expenditure.

Year.	Superintendence, etc.	Settlement offices.	Survey Schools.	Kanungo establishment.	Registration of trade.	Total.
1	2	3	4	5	6	7
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1897-98 ...	51,022 12 10	79,745 6 3	2,252 3 11	1,41,507 10 9	4,454 2 5	2,78,982 4 2
1898-99 ...	57,351 8 3*	60,264 14 10†	2,116 0 8	1,46,890 14 3‡	4,560 7 8§	2,71,183 13 8

* This includes—

	Rs. a. p.
(*a*) Head office charges...	...42,590 15 4
(*b*) Charges for the office of the Superintendent of Land Records ...	... 10,306 11 7
(*c*) Experimental cultivation	... 2,654 12 5
(*d*) Veterinary charges ...	... 1,053 2 2
(*e*) Raingauge charges ...	... 265 5 0
(*f*) Economic collection ...	... 480 9 9
Total	...57,351 8 3

† This includes—

	Rs. a. p.
(*a*) Cost of Cachar settlement	34,982 12 4
(*b*) Cost of *ilam* settlement ...	25,282 2 6
Total ...	...60,264 14 10

‡ This includes—

	Rs. a. p.
(*a*) Registrar kanungos	6,481 13 8
(*b*) Assistant registrar kanungos	4,772 13 0
(*c*) Supervisor kanungos	20,409 2 6
(*d*) District mandals	1,04,169 10 3
(*e*) Chainmen and peon	1,346 2 10
(*f*) Temporary establishment	1,445 4 4
(*g*) Travelling allowance	967 12 9
(*h*) Compensation for dearness of food grains	999 13 4
(*i*) Petty construction and repairs	637 12 0
(*j*) Cost and repair of instruments	213 4 0
(*k*) Rewards	2,142 7 4
(*l*) Map charges	48 0 9
(*m*) Purchase of country stationery	388 8 3
(*n*) Office expenses and miscellaneous	2,868 5 3
Total	1,46,890 14 3

§ This includes—

	Rs. a. p.
(*a*) Registration of river-borne trade	3,290 11 6
(*b*) Provincial statistics (frontier trade)	1,269 12 2
Total	4,560 7 8

There has been a decrease of Rs. 7,798 in the total expenditure during the year, as compared with 1897-98, due chiefly to a decrease of Rs. 19,480 under the head "Settlement Officers" consequent on the reduction in the field establishment and supervising staff entertained for the Cachar settlement operations. The figures show an increase under the head "Superintendence, etc.," due to (1) the entertainment of the Assistant to the Director of Land Records and Agriculture for the whole year, against about 5 months in the previous year, (2) to the larger amount of travelling allowance drawn, (3) to the purchase of furniture, (4) to heavier expenditure on the Upper Shillong Experimental Farm, and (5) to an increase in the expenditure under the head "Economic Collection" in supplying the Reporter on Economic Products to the Government of India with specimens of cotton cloths manufactured in the province. Some increase is also noticeable under "Kanungo Establishment" due to the promotion of mandals and *patwaris* to fill up vacancies in the higher grades and to the entertainment for the first time during the year of a staff of superviso r kanungos and *patwaris* for the *ilam* lands in Sylhet.

Conclusion.

59. I desire to acknowledge my obligations to Babu Asoke Jiban Banerjee, head clerk of my office, who, though new to the work, has worked indefatigably to secure submission of this report in proper time.

DATED SHILLONG:
The 1st July 1899.

L. J. KERSHAW,
Offg. Director, Department of Land Records and Agriculture, Assam.

APPENDICES

APPENDIX A.

Diary Statement of Sub-Deputy Collectors for the year 1898-99.

Name of Sub-Deputy Collector.	District.	Subdivision.	Number of days in charge.	Number of days on tour										Number of days at office work.	Number of days without work.							Remarks.
				In cadastral mauzas.					In non-cadastral mauzas.													
				Running check-lines.	Testing crops.	Examining Mandals' or Patwaris' papers.	Enquiring into cases.	Miscellaneous work: inspecting theodolite stations.	Testing measurements.	Examining Mandals' or Patwaris' papers.	Enquiring into cases.	Miscellaneous work.	Total.		Travelling from place to place.	Gazetted holidays.	Sick.	Privilege leave.	Leave on half pay.	Leave without pay.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Babu Purna Chandra Mitra	Sylhet ...	North Sylhet	365	32	26	35	17	51	9	...	7	...	177	151	7	15	12	...	...	...	34	
,, Harendra Kumar Ghosh	,, ...	,, ...	298	6	16	11	97	10	...	...	...	...	140	132	8	18	...	...	...	...	26	
,, Janaki Nath Das	Goalpara ...	Dhubri	13 *a*	1	...	3	...	...	6	13	2	16	41	58	6	23	9	...	...	...	38	
Munshi Faiz Uddin Ahmed	,, ...	,, ...	162	52	7	34	3	40	...	4	2	11	153	9	5	...	...	...	...	...	5	
,, Ditto	,, ...	Bijni tahsil	137	21	4	55	16	18	...	...	...	...	114	22	...	1	...	...	...	...	1	
Babu Abhay Sankar Guha	Kamrup ...	Barpeta *b*	91	7	...	1	...	...	1	...	...	5	14	60	3	...	12	2†	...	...	17	
,, Lakheswar Sarma	,, ...	,, ...	127	45	4	15	1	10	...	...	...	...	75	34	9	9	...	...	...	...	18	
,, Gopal Chandra Puri Bhuyan	,, ...	,, ...	44	15	...	4	...	2	...	2	...	1	24	6	14	...	...	...	...	...	14	
,, Rajani Kanta Bardalai	,, ...	Gauhati	365	34	20	80	6	26	5	...	...	2	173	130	...	18	22	22	...	...	62	
,, Mohendra Chandra De	,, ...	,, ...	205	20	...	52	3	17	4	2	...	4	102	79	3	22	...	...	...	...	25	
Maulvi Abrar Hussain	,, ...	,, ...	77 *d*	21	14	5	...	2	...	...	...	...	42	25	4	4	2	...	...	...	10	
Babu Bhola Nath Das	,, ...	Boko tahsil (Gauhati subdivision)	124	10	3	6	3	23	2	...	1	...	58	65	...	1	...	...	...	...	1	
,, Jagneswar Das Gupta	Darrang ...	Mangaldai	305	32	17	59	3	89	1	1	...	...	202	143	...	18	2	...	...	...	20	
,, Rama Kanta Barua	,, ...	,, tahsil ...	112 *c*	...	...	...	24	6	...	...	...	...	30	67	4	...	11	...	...	...	15	
,, Bhola Nath Das	,, ...	Tezpur	241	6	...	3	4	10	...	...	...	9	41	140	...	44	...	16	...	...	60	
,, Mohendra Chandra De	,, ...	,, ...	116	14	7	15	...	9	...	1	...	28	74	38	...	1	3	...	...	...	4	
,, Radha Mohan Das	Nowgong ...	Nowgong	395	49	9	48	23	42	8	1	1	15	202	145	...	18	...	...	...	...	18	
,, Nagendra Chandra Datta	,, ...	,, ...	221	18	...	28	5	34	...	1	2	...	88	112	...	16	5	...	...	...	21	
,, Harendra Kumar Ghosh	,, ...	,, ...	30	3	...	4	12	3	...	...	...	...	22	7	...	1	...	...	...	...	8	
,, Sarat Chandra Lahiri	Sibsagar ...	Golaghat	365	41	3	16	25	93	2	...	...	...	180	143	...	11	15	11†	...	...	37	
,, Radha Kanta Handiqui	,, ...	Jorhat	365	35	2	2	21	104	3	...	...	...	167	143	...	38	10	7†	...	...	55	
Munshi Didar Uddin Ahmed	,, ...	Sadr	365	53	3	47	14	49	...	...	...	...	166	171	3	20	1	4†	...	...	28	
Babu Hem Chandra Goswami	Lakhimpur ...	Dibrugarh	354 *f*	18	6	17	3	36	6	...	2	98	186	118	18	18	14	...	...	...	50	
,, Ram Kumar Aditya	,, ...	North Lakhimpur ...	365	25	10	25	15	41	31	10	3	2	162	138	35	30	...	...	...	...	65	

† Casual leave.

a Exclusive of 66 days spent in Survey Camp.
b The subdivision was without a Sub-Deputy Collector for 103 days.
c Exclusive of 79 days spent in Survey Camp.
d Exclusive of 72 days spent in Survey Camp.
e Exclusive of 77 days spent in Survey Camp.
Exclusive of 11 days spent at Departmental Examination.

APPENDIX B.

Diary Statement of Supervisor Kanungos and Surveyors for the year 1898-99.

Name of Supervisor Kanungo or Surveyor.	Name of Circle.	District.	Subdivision.	Number of days in charge.	Number of days on tour										Number of days at office work.	Number of days without work.						Remarks.
					In cadastral mauzas.					In non-cadastral mauzas.												
					Running check-lines.	Testing crops.	Examining Mandals' or Patwaris' papers.	Enquiring into cases.	Miscellaneous work : inspecting theodolite stations, etc.	Testing measurements.	Examining Mandals' or Patwaris' papers.	Enquiring into cases.	Miscellaneous work.	Total.		Travelling from place to place.	Gazetted holidays.	Sick.	Privilege leave.	Leave on half pay.	Leave without pay.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Binod Behari Chaudhuri ...	Hailakandi ...	Cachar ...	Hailakandi ...	365	22	15	...	52	3	...	...	...	...	92	199	31	17	14	12	...	...	74	
Dina Nath Ghosh	Saraspur ...	,, ...	,, ...	286	30	64	...	14	2	...	...	...	...	110	122	18	36	...	...	...	...	54	
Ditto	Chatlahaor ...	,, ...	Sadr ...	79	27	...	...	6	12	...	...	...	...	45	21	13	...	...	..	...	...	13	
Ram Dayal Chakravarti ...	,, ...	,, ...	,, ...	304	9	42	...	8	51	...	...	...	...	110	117	30	31	...	11	...	5	77	
Gopi Charan De	Katigara ...	,, ...	,, ...	365	28	28	4	47	63	6	...	2	...	178	91	44	34	8	10	...	...	96	
Sambhu Ram Das	Barakpar ...	,, ...	,, ...	275	20	13	9	14	10	...	...	...	...	66	179	5	15	10	...	...	...	30	
Anukul Chandra Bannerjia (offg.) ...	,, ...	,, ...	,, ...	90	...	...	...	...	...	...	...	...	...	...	90	...	...	...	...	...	...	...	
Shyama Charan Guha	Udharband ...	,, ...	,, ...	365	68	48	6	70	25	...	...	...	...	217	92	31	22	3	...	...	...	56	
Kamini Kumar De	Lakhipur ...	,, ...	,, ...	365	86	18	...	...	...	...	...	...	...	104	222	4	30	5	...	...	...	39	
Jogesh Chandra Mitra	Sonapur ...	,, ...	,, ...	304	24	20	...	10	18	...	...	...	...	72	174	25	20	...	...	...	13	58	
Sashi Kumar Kar	Kanairghat Circle.	Sylhet ...	North Sylhet ...	234	1	...	...	10	2	...	...	...	...	13	173	3	23	22	...	...	...	48	

Hari Mohan Das (Offg.) ...	Ditto ...	,, ...	,, ...	131	1	49	23	7	31	...	...	...	...	111	12	...	...	...	...	...	...	8
Kumudini Kanta Mazumdar ...	Jaintiapur* ...	,, ...	,, ...	244	...	...	...	18	2	...	...	...	...	20	183	5	26	10	...	...	...	41
Jajneswar Datta	,, ...	,, ...	,, ...	89	7	19	11	17	26	...	...	...	...	80	3	6	...	...	...	...	...	6
Sarat Chandra Sarma	,, ...	,, ...	,, ...	17	...	...	15	1	...	...	...	...	...	16	...	1	...	...	...	...	...	1
Abdus Sabur	Goainghat, I ...	,, ...	,, ...	365	21	51	46	34	15	...	...	...	...	167	175	1	12	16	...	...	...	23
Ishan Chandra Gupta... ...	,, II†	,, ...	,, ...	114	...	...	...	...	...	...	...	...	...	...	110	...	4	...	...	...	...	4
Hari Mohan Das	,, ,, ...	,, ...	,, ...	90	...	...	...	...	...	...	...	...	...	...	74	...	16	...	...	...	...	16
Sashi Kumar Kar	,, ,, ...	,, ...	,, ...	131	15	37	20	10	28	...	...	...	...	110	5	7	...	9	...	...	...	16
Ratiram Das	Bijni ...	Goalpara ...	Dhubri ...	365	71	10	68	4	26	...	...	...	...	179	151	14	13	8	...	...	...	35
Joy Ram Deka	Bajali ...	Kamrup ...	Barpeta ...	244	78	...	...	9	10	...	...	...	...	97	125	...	15	...	7	...	...	22
Munshi Ellias Ali	,, ...	,, ...	,, ...	121	68	9	...	3	7	...	...	...	...	87	24	3	...	...	7	...	...	10
Bhagirath Deka	Roha ...	,, ...	,, ...	230	99	17	12	5	4	...	...	...	...	137	80	3	...	10	...	...	...	13
Sita Ram Das	,, ...	,, ...	,, ...	135	44	8	14	3	4	...	...	...	...	73	57	5	...	...	...	...	...	5
Munshi Ellias Ali	Barpeta ...	,, ...	,, ...	231	66	...	3	3	7	...	...	...	...	79	119	...	...	...	33	...	...	33
Shib Nath Deka	,, ...	,, ...	,, ...	134	51	9	8	3	20	...	...	...	...	91	37	6	...	...	...	...	...	6
Briti Sen	Beltola ...	,, ...	Gauhati ...	65	...	...	...	10	13	...	...	...	...	23	42	...	...	...	...	...	...	...
Shib Ram Das	,, ...	,, ...	,, ...	300	54	14	...	35	58	7	...	...	...	168	106	5	15	6	...	...	...	26
Kon Nath Deka	Palasbari ...	,, ...	,, ...	26	7	...	...	...	...	...	...	...	...	7	11	3	...	...	5	...	...	8
Tita Ram Gagai	,, ...	,, ...	,, ...	339	58	33	49	24	38	...	...	...	...	202	88	21	12	1	15	...	...	49
Mantan Ram Das	Chhaigaon ...	,, ...	,, ...	365	...	17	80	15	80	...	...	...	...	192	148	16	4	5	...	...	...	25
Rang Dev Sarma	Boko ...	,, ...	,, ...	17	4	1	...	...	...	...	...	...	...	5	5	6	1	...	...	...	...	7
Nao Mal Das	,, ...	,, ...	,, ...	348	27	32	...	8	115	7	...	...	...	189	87	42	3	20	7	...	...	72
Bati Ram Das	Patidarrang ...	,, ...	,, ...	365	28	40	...	20	83	...	...	...	...	171	163	25	4	2	...	...	...	31
Tita Ram Gagai	Rangiya ...	,, ...	,, ...	26	...	1	...	...	...	...	...	...	...	1	18	...	...	7	...	...	...	7
Kon Nath Deka	,, ...	,, ...	,, ...	339	91	59	7	47	11	...	...	...	...	215	93	13	1	2	15	...	...	31
Shib Nath Deka	Barkhetri ...	,, ...	,, ...	214	46	...	...	13	37	...	...	...	...	96	98	5	...	15	...	...	...	20
Muhammad Ellias	,, ...	,, ...	,, ...	30	9	...	...	...	17	...	...	...	...	26	4	...	...	...	...	...	...	...
Joy Ram Deka	,, ...	,, ...	,, ...	121	55	10	...	16	27	...	...	...	...	108	11	...	2	...	...	...	...	2
Santi Ram Das	Nalbari ...	,, ...	,, ...	365	1	66	54	70	27	...	...	...	...	218	110	15	15	...	7	...	...	37
Jiu Ram Das	Hajo ...	,, ...	,, ...	217	...	18	27	11	26	...	...	...	...	82	91	7	6	1	30	...	...	44
Ramnath Datta	,, ...	,, ...	,, ...	148	...	21	38	17	51	...	...	...	...	127	19	...	2	...	...	...	...	2

* The circle was without a Supervisor Kanungo for 15 days.

† The circle was without a Supervisor Kanungo for 30 days.

APPENDIX B—*continued.*

Name of Supervisor Kanungo or Surveyor.	Name of Circle.	District.	Subdivision.	Number of days in charge.	Number of days on tour										Number of days at office work.	Number of days without work.							Remarks.
					In cadastral mauzas.					In non-cadastral mauzas.													
					Running check-lines.	Testing crops.	Examining Mandals' or Patwaris' papers.	Enquiring into cases.	Miscellaneous work : inspecting theodolite stations, etc.	Testing measurements.	Examining Mandals' or Patwaris' papers.	Enquiring into cases.	Miscellaneous work.	Total.		Travelling from place to place.	Gazetted holidays.	Sick.	Privilege leave.	Leave on half pay.	Leave without pay.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Nao Mal Das	Barama ...	Hajo ...	Gauhati ...	17	...	...	...	...	3	..	...	...	...	3	8	4	...	2	...	...	...	6	
Rang Dev Sarma	,, ...	,, ...	,, ...	348	...	29	15	42	109	...	...	...	...	195	69	31	...	23	30	...	...	84	
Jagat Ram Das	Tambulpur ...	,, ...	,, ...	365	128	19	...	5	54	...	...	...	...	206	156	3	...	...	...	...	...	3	
Chandra Kanta Sarkar ...	Patharughat ...	Darrang ...	Mangaldai ...	365	86	14	8	11	111	...	...	...	...	230	128	5	...	2	...	...	...	7	
Kalamani Das	Mangaldai ...	,, ...	,, ...	365	75	17	10	23	112	...	...	...	...	237	115	...	7	6	...	...	...	13	
Rammal Das	Kalaigaon ...	,, ...	,, ...	317	68	18	3	10	71	...	...	...	...	170	130	...	17	...	...	...	...	17	
Umakanta Saharia	,, ...	,, ...	,, ...	48	25	...	...	...	12	...	...	...	...	37	...	...	3	...	8	...	...	11	
Jagannath Deka	Bengbari ...	,, ...	,, ...	365	64	7	13	6	111	...	...	...	...	201	131	...	18	5	10	...	...	33	
Ganga Ram Das	Eastern ...	,, ...	Tezpur ...	365	51	11	11	4	139	...	...	...	...	216	124	2	17	...	6	...	...	25	
Manu Ram Talukdar	Western ...	,, ...	,, ...	365	53	30	...	3	125	...	...	...	...	211	138	1	15	...	...	...	...	16	
Molan Chandra Bora	Silghat ...	Nowgong ...	Nowgong ...	365	130	8	13	53	5	...	2	...	...	211	129	8	9	3	5	...	...	25	

Puaram Mahanta	Town ...	,, ...	,, ...	365	138	10	...	50	14	...	...	...	...	212	125	2	18	4	4	...	...	28
Tara Nath Bora	Doboka ...	,, ...	,, ...	365	49	48	...	11	40	...	...	...	93	241	98	9	17	...	...	...	...	26
Mina Ram Das	Roha ...	,, ...	,, ...	365	150	9	24	2	24	...	...	...	...	209	132	10	8	6	...	...	...	24
Govinda Ram Datta	Dhing ...	,, ...	,, ...	365	135	7	9	4	79	...	...	...	...	234	109	...	12	10	...	...	...	22
Kala Ram Bardalai	Gerua ...	,, ...	,, ...	340	95	5	55	15	4	...	...	...	...	174	124	22	16	4	...	...	...	42
Surath Chandra Bora	,, ...	,, ...	,, ...	25	16	...	...	...	8	...	...	...	...	24	...	1	...	...	...	...	...	1
Ramrath Datta	Ghugua ...	,, ...	,, ...	217	42	...	11	2	29	...	...	...	..	84	103	4	4	...	22	...	...	30
Jiu Ram Das	,, ...	,, ...	,, ...	18	22	44	5	...	37	...	...	...	...	108	22	16	2	...	...	...	...	18
Gazendra Narayan Das ...	Mayang ...	,, ...	,, ...	365	102	8	6	3	99	...	...	...	...	218	128	4	15	...	...	...	...	19
Durga Ram Datta	Northern ...	Sibsagar ..	Golaghat ...	365	83	23	...	3	124	...	...	...	...	233	131	...	1	...	...	...	...	1
Bhakat Ram Datta	Southern ...	,, ...	,, ...	335	70	19	...	19	65	...	...	...	...	173	140	...	...	22	...	...	...	22
Hara Nath Datta (offg.) ...	,, ...	,, ...	,, ...	30	14	...	...	1	9	...	...	...	...	24	4	...	2	...	...	...	...	2
Kati Ram Das	Eastern ...	,, ...	Jorhat ...	130	17	16	26	23	30	...	...	...	...	112	16	1	1	...	...	...	...	2
Bhola Ram Datta (offg.) ...	,, ...	,, ...	,, ...	235	25	3	8	16	22	...	...	...	...	74	147	2	3	9	...	...	...	14
Mahi Ram Das (Senior) ...	North-Western	,, ...	,, ...	365	66	42	22	46	30	5	...	...	...	211	122	...	15	7	10	...	...	32
Mahi Ram Das (Junior) ...	South-Western	,, ...	,, ...	365	40	23	58	24	51	...	...	...	...	196	131	10	16	1	11	...	...	38
Shib Nath Sarma	Majuli ...	,, ...	,, ...	365	90	12	6	19	71	3	...	1	6	208	138	13	3	...	3	...	...	19
Shib Ram Bora	Eastern ...	,, ...	Sadr ...	335	54	10	1	...	50	1	1	...	...	117	154	3	15	31	15	...	...	64
Manpur Gagai (offg.)	,, ...	,, ...	,, ...	30	11	5	...	...	2	...	...	...	...	18	11	...	1	...	...	...	...	1
Gobinda Nath Ray	Central ...	,, ...	,, ...	365	84	34	...	11	77	...	...	...	...	206	138	...	21	...	...	...	...	21
Lalit Ram Chaudhuri	Western ...	,, ...	,, ...	365	83	23	...	3	124	...	...	...	...	233	131	...	1	...	...	...	...	1
Moheswar Das	Dibrugarh ...	Lakhimpur ...	Dibrugarh ...	365	42	21	5	42	79	...	...	...	...	189	110	...	18	1	47	...	...	66
Lakshmi Kanta Das	Chabua ...	,, ...	,, ...	365	44	19	14	5	110	...	...	...	...	192	136	2	35	...	...	...	...	37
Shahabuddin Ahmed	North Lakhimpur.	,, ...	North Lakhimpur.	130	...	...	...	1	8	...	...	...	...	9	104	...	15	2	...	...	...	17
Bhabiram Raj Kumar (offg.) ...	,, ...	,, ...	,, ...	235	87	26	25	9	21	4	7	2	12	193	38	4	...	...	...	...	...	4
Samudra Narayan Das, Government Surveyor.	...	Kamrup ...	Gauhati ...	365	43	26	40	6	68	1	1	...	...	185	142	11	15	12	...	...	...	38
Muzaffer Ali, Government Surveyor	..	Lakhimpur ...	Dibrugarh ...	250	...	...	...	...	...	58	...	1	13	72	133	4	34	7	...	...	...	45
Chandreswar Chengkakati, ,, (officiating).	...	,, ...	,, ...	115	...	...	...	...	...	26	...	...	40	66	14	15	13	...	7	...	...	35

APPENDIX C.

Work Statement of District and Subdivisional Officers for the year 1898-99.

PART I.—DEPUTY COMMISSIONERS.

Name of Officer.	District.	Subdivision.	Area cadastrally surveyed.														Area not cadastrally surveyed.						Area of concealed cultivation discovered (cases).	Area found wrongly classified.		
			Total number of Supervisor Kanungos.	Number of Supervisor Kanungos whose work was inspected.	Number of villages tested.	Total number of Mandals or Patwaris.	Number of Mandals or Patwaris		Testing by check-lines.						Testing without check-lines.		Total number of Mandals.	Number of Mandals or Patwaris		Total area tested as returned by Mauzadars, in acres.	Total area as found on measurement, in acres.	Percentage of error in Mauzadars' papers.		*Basti* shown as		
							Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Rupit* shown as *faringati* (acres).
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
A. Porteous, Esq.	Sylhet ..	..	4	2	3	56	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Captain P. R. T. Gurdon	Kamrup ..	..	14	..	5	271	85	5	5	53	114	2·10	54,144	0·02	..	..	29	12	..	..	..	..	..	..	..	..
Colonel M. A. Gray	Darrang ..	..	6	..	..	117	13	..	..	..	..	..	15,686	..	..	..	22	..	..	..	..	..	..	..	..	..
W. J. Reid, Esq.	Nowgong ..	..	8	..	2	160	3	1	..	..	..	..	43,215	..	..	..	8	1	1	..	..	..	..	..	..	..
B. V. Nicholl, Esq.	Sibsagar ..	..	9	..	1	196	51	1	1	8	10	0·28	23,555	0·007	..	..	7	..	..	..	..	..	..	..	..	..
R. C. Hamilton, Esq.	Lakhimpur ..	..	3	1	1	49	2	2	1	4	1	0·13	5,395	0·01	.	..	59	2	2	61	63·41	3·95	1·49	..	..	..

PART II.—SUBDIVISIONAL OFFICERS, ASSISTANT COMMISSIONERS, AND EXTRA ASSISTANT COMMISSIONERS.

Babu Chandra Kanta Sen, Extra Assistant Commissioner	Sylhet ..	North Sylhet ..	4	4	..	52	52	11	..	..	..	..	..	..	925	1,572	..	..	..	..	..	..	..	..	..	..
Rai Madhab Chandra Bardalai, Bahadur, Extra Assistant Commissioner	Kamrup ..	Barpeta ..	3	..	9	61	22	9	11*	142	222	6·74	18,726	0·23	..	..	9	4	4	119·96	121·05	0·91	..	..	..	..1
Babu Abhay Sankar Guha, Extra Assistant Commissioner	,, ..	,, ..	3	..	2	61	29	2	2*	24	38	1·16	18,726	0·04	..	..	9	4	..	..	..	..	..	..	..	..
Lieutenant A. Playfair, Assistant Commissioner ..	Darrang ..	Mangaldai ..	4	..	..	82	82	12	30*	246	294	11·58	10,311	0·72	10	20	2	..	1	..	..	..	..	..	..	..
B. C. Allen, Esq., Assistant Commissioner	,, ..	Tezpur ..	2	..	..	35	15	..	..	..	..	..	..	..	..	..	20	2	2	4[1]	..	..	..	..	..	..
F. E. Jackson, Esq., ,, ,, ...	Sibsagar ..	Golaghat ..	2	..	3	52	4	2	3†	31	48	1·76	7,66	0·15	..	..	3	..	..	..	..	..	..	..	..	..
R. C. Hamilton, Esq., ,, ,, ...	,, ..	Jorhat ..	4	..	..	73	2	..	1*	4	4	0·89	8,866	0·06	..	..	4	..	..	..	..	..	..	..	..	..
H. C. Barnes, Esq., ,, ,, ...	,, ..	,, ..	..	..	2		9	2	1†	3	5	0·60	8,826	0·05	..	..										
H. A. C. Colquhoun, Esq., ,, ,, ...	Lakhimpur ..	North Lakhimpur	1	1	..	20	6	..	..	..	.	..	..	..	..	..	13	4	..	..	..	..		..	..	..

* Independent check-lines and castrally-surveyed area.
† ,, ,, ,, in extension survey ,,

APPENDIX D.

Work Statement of Sub-Deputy Collectors for the year 1898-99.

Name of Sub-Deputy Collector.	District.	Subdivision.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area (in acres) of concealed cultivation discovered.	Area found wrongly classified.		
			Number of villages tested.	Total number of Mandals or Patwaris.	Number of Mandals or Patwaris		Testing by check-lines.						Testing without check-lines.		Total number of Mandals or Patwaris.	Number of Mandals or Patwaris		Total area (in acres) as returned by Mauzadars.	Total area (in acres) as found on re-measurement.	Percentage of errors in Mauzadar's papers.		*Basti* shown as		
					Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *kutani*.	Number of offsets.	Total length of lines in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Rupit* shown as *faringati* (acres).
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Babu Purna Chandra Mitra	Sylhet ..	North Sylhet (Jaintia).	426	52	52	36	(*a*) 56	401	1,527	17·62	386	29·22	7,256	16,028	..	..	..	..	..	..	..	..	..	..
,, Harendra Kumar Ghosh	,, ..	,, ..	24	52	15	4	(*a*) 6	54	106	3·20	386	5·30	793	2,112	..	..	..	..	..	..	..	..	..	..
Munshi Faizuddin Ahmed	Goalpara ..	Dhubri ..	26	22	22	22	(*a*) 121	1,320	2,579	59·12	5,400	7·01	..	..	12	3	..	215	236	9·76	..	..	..	42
,, ,, ,, ...	,, ..	Dhubri (Bijni tahsil).	44	13	13	8	(*a*) 27	259	381	14·83	5,636	1·68	..	..	3	3	..	..	..	..	..	..	..	..
Babu Janaki Nath Das	,, ..	Dhubri ..	1	22	6	1	(*a*) 1	13	35	0·75	6,791	0·07	..	..	9	8	5	355	358	0·84	..	..	3	..
,, Abhay Sankar Guha	Kamrup ..	Barpeta ..	14	61	17	12	(*a*) 15	198	340	8·43	18,726	0·29	..	..	9	1	1	..	..	..	..	..	..	..
,, Lakheswar Sarma	,, ..	,, ..	43		44	30	(*a*) 58	699	1,272	29·71		1·02	21	2,161		6	..	..	..	..	..	..	..	60·37
,, Gopal Chandra Puri Bhuiyan ..	,, ..	,, ..	20		7	16	(*a*) 6	83	140	3·73		0·59	..	..		1	..	..	..	..	..	..	..	..
							(*c*) 15	214	412	13·57														
,, Rajanikanta Bardalai	,, ..	Gauhati ..	60	210	209	56	(*a*) 63	879	1,021	39·28	35,418	0·75	694	1,856	20	18	3	50	53	5·66	11	16	513	..
							(*c*) 4	50	87	2·23			80	171	..	..	..	..	..	..	..	..	..	..
Carried over ..	....	....	658	358	357	184	372	4,170	7,900	192·47	65,566	..	8,844	22,328	44	32	9	620	647	..	11	16	516	102·37

(*a*) Independent check-lines in cadastral area.

(*c*) Independent check-lines run in extension survey.

APPENDIX D—*continued.*

Name of Sub-Deputy Collector.	District.	Subdivision.	Area cadastrally surveyed												Area not cadastrally surveyed.						Area (in acres) of concealed cultivation discovered.	Area found wrongly classified.		
			Number of villages tested.	Total number of Mandals or Patwaris.	Number of Mandals or Patwaris		Testing by check-lines.						Testing without check-lines.		Total number of Mandals or Patwaris.	Number of Mandals or Patwaris		Total area (in acres) as returned by Mauzadars.	Total area (in acres) as found on remeasurement.	Percentage of errors in Mauzadar's papers.		*Basti* shown as		*Rupit* shown as *faringati*, in acres.
					Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of ill eat miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Brought forward ..	....	....	658	358	357	184	372	4,170	7,900	192·47	65·566	..	8,844	22,328	44	32	9	620	647	..	11	16	516	102·37
Babu Mohendra Chandra De	Kamrup ..	Gauhati ..	47	210	120	28	(*a*) 26 (*b*) 1 (*c*) 1	341 12 34	510 17 12	15·32 0·48 0·99	35,418	0·29	730	593	20	19	6	..	..	..	39	..	..	..
Maulvi Abrar Hussain	,, ..	,, ..	43	210	27	35	(*a*) 25	390	390	14·55	35,418	0·26	621	474	20	..	..	..	..	..	..	..	..	3·08
Babu Bholanath Das	,, ..	Boko tahsil (Gauhati).	13	28	19	9	11	188	214	(*a*)6·20 (*c*)0·82	6,168	0·72	112	100	7	5	2	35·70	36·36	1·85	4·13	..	0·66	..
,, Jajnesvar Das Gupta	Darrang ..	Mangaldai ..	63	82	81	58	(*a*) 67 (*c*) 2 (*f*) 9	738 30 ..	1,010 47 ..	27·81 2·28 4·47	10,311	1·86	2,067	1,227	2	2	1	48	49	2·04	..	..	..	..
,, Bholanath Das	,, ..	Tezpur ..	4	35	30	4	7	94	56	(*a*)2·44 (*c*)2·29 (*f*)5·84	5,375	0·56	58	..	20	6	..	..	..	..	..	..	..	..
,, Mohendra Chandra De	,, ..	,, ..	56	35	32	18	(*a*) 11 (*b*) 1 (*c*) 5 (*f*) ..	160 6 57 ..	155 14 90 ..	6·69 .. 2·90 11·46	5,375	1·14	183	172	21	7	1	..	..	..	3·70	..	1·08	1·41

,, Ramdhaohan Dàs	Nowgong ..	Nowgong ..	182	160	160	125	(a) 48	610	817	28·64	43,215	0·59	3,500	3,000	8	8	8	...	..	..	325	..	65	420
							(b) 16	196	208	9·82														
							(c) 13	188	226	11·15														
							(d) 18	162	202	6·18														
							(f) 42	..	..	7·00														
,, Nagendra Chandra Datta	,, ..	,, ..	62	160	108	34	(a) 27	299	317	13·26	43,215	0·18	570	320	8	4	4	..	..	..	..	..	..	..
,, Harendra Kumar Ghosh	,, ..	,, ..	..	160	6	..	(a) 3	70	84	2·62	43,215	0·04	395	..	..	..	..	..	..	..	..	..	..	..
,, Sarat Chandra Lahiri	Sibsagar ..	Golaghat ..	84	52	52	52	45	(a) 346	351	13·21	7,668	1·52	878	1,632	3	3	1	64	84	31·1	7·84	3·05	1·23	..
								(c) 111	119	5·08														
								(b) 30	44	1·15														
								(f) ..	..	7·97														
,, Radha Kanta Handiqui ..	,, ..	Jorhat ..	41	73	73	28	(a) 54	537	904	28·74	8,826	2·19	5	6	4	4	3	46·28	45·95	0·72	7·60	..	..	..
							(b) 4	46	48	2·33														
							(c) 3	27	28	1·45														
							(f) ..	..	..	7·92														
							(g) 7	..	..	2·74														
Munshi Didaruddin Ahmad	,, ...	Sadr ..	82	71	71	34	(a) 65	420	571	30·77	7,061	2·95	247	1,186	..	..	..	..	..	..	8·70	..	..	..
							(b) 2	9	12	0·95														
							(c) 3	25	21	1·81														
							(f) 140	..	..	10·95														
							(g) 76	..	..	8·92														
Babu Hem Chandra Goswami	Lakhimpur ...	Dibrugarh ..	40	29	29	18	(a) 16	146	221	7·71	2,836	6·04	668	214	46	8	6	47·66	57·66	20·98	13	..	3	..
							(c) 49	198	290	19·05														
							(f) 61	..	..	23·39														
							(g) 62	..	..	5·33														
,, Ram Kumar Aditya	,, ..	North Lakhimpur	105	20	20	20	(a) 40	194	362	8·52	2,559	2·13	850	560	13	13	13	52	54	3·84	..	..	..	..
							(b) 4	45	61	1·58														
							(d) 1	16	20	0·79														
							(f) 99	14	..	5·78														
							(g) 63	..	..	10·80														
		Total .	1,480	880	879	648	1,499	9,909	15,321	581·72	160,208	1·78	19,728	31,812	138	91	59	913·64	973·97	6·61	419·97	19·05	583·97	831·78

(a) Independent check-lines in cadastral area,

(b) Check-lines run over the lines of subordinate officers in cadastral area,

(c) Independent check-lines run in extension survey.

(d) Check-lines run over the lines of subordinate officers in extension survey,

(f) Lines run in surveying waste land grants.

(g) Lines run in testing the demarcation of special estates.

APPENDIX E.

Work Statement of Supervisor Kanungos and Surveyors for the year 1898-99.

Name of Supervisor Kanungo or Surveyor.	Circle.	District.	Subdivision.	Area cadastrally surveyed.												
				Number of villages tested.	Total number of Mandals or Patwaris.	Number of Mandals or Patwaris		Testing by check-lines.						Testing without check-lines.		
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Binod Behari Chaudhuri ...	Hailakandi ...	Cachar ...	Hailakandi...	28	19	...	15	(*a*) 329	44	90	21·65	...	...	1,009	908·10	
Dina Nath Ghosh	Saraspur ...	„ ...	„ ...	149	10	...	14	(*a*) 181	41	204	20·80	...	...	10,940	18,160·04	
Dina Nath Ghosh	Chatlahaor ...	„ ...	Sadr (Silchar)	33	...	...	3	(*a*) 138	39	158	16·35	...	...	...		
Ram Doyal Chakravarti ...	„ ...	„ ...	„ ...	94	10	...	10	(*a*) 18	18	24	2·85	...	...	1,609	7,240·04	
Gopi Charan De	Katigara ...	„ ...	„ ...	145	16	4	16	(*a*) 1,130	197	356	17·75	...	...	1,763	2,400	
Sambhuram Das	Barakpar ...	„ ...	„ ...	41	8	17	7	(*a*) 56	120	45	9·66	...	...	1,308	2,171·28	
Shyama Charan Guha ...	Udharband ...	„ ...	„ ...	143	12	6	20	(*a*) 186	105	185	42·00	...	...	9,815	17,179	
Kamini Kumar De	Lakhipur ...	„ ...	„ ...	30	11	...	4	(*a*) 168	27	127	10·95	...	...	584	928·56	
Jogesh Chandra Mitra ...	Sonapur ...	„ ...	„ ...	45	11	...	11	(*a*) 106	10	14	7·55	...	...	7,584	12,168·55	
Sashi Kumar Kar	Kanairghat ...	Sylhet ...	North Sylhet	21	16	16	1	(*a*) 6	107	3	2·56	169·58	11·55	15,834	18,420	
Hari Mohan Das	„ ...	„ ...	„ ...	102		16	16	(*a*) 2	9	15	0·49					
Kumudini Kanta Mazumdar ...	Jaintiapur ...	„ ...	„ ...	...	10	10	...	...	...	...	...	...	...	...	...	
Jajneswar Datta	„ ...	„ ...	„ ...	80	10	10	10	(*a*) 14	109	114	4·72	130·47	23·23	7,490	680	
Sarat Chandra Sarma ...	„ ...	„ ...	„ ...	33		10	...	...	...	...	...	...	...	...	...	

Abdus Sabur	Goa i n g h a t (No. I)	„ ...	„ ...	134	14	14	14	(a) 30	134	321	12·11	120·85	64·58	4,792	9,293
Ishan Chandra Gupta ...	„ („ II)	„ ...	„ ...	...		12	...	...	...	...	...				
Hari Mohan Das	„ ...	„ ...	„ ...	...	12	12	...	...	...	...	...	102·48	85·45	8,957	29,327
Sashi Kumar Kar	„ ...	„ ...	„ ...	105		12	12	(a) 24	98	145	10·76				
								(b) 4	17	10	2·86				
Rati Ram Das	Bijni and Sidli	Goalpara ...	Dhubri ...	97	17	17	17	(a) 136	1,390	2,247	76·04	7,997	6·10	834	88,816
Joyram Deka	Bajali ...	Kamrup ...	Barpeta ...	96	22	22	20	(a) 69	926	1,429	36·39	4,525	10·95	3,727	3,037
Munshi Ellias Ali	„ „	„ ...	„ ...	81		22	22	(a) 71	877	1,432	41·04				
Bhagirath Deka	Roha ...	„ ...	„	99		19	19	(a) 125	1,373	2,728	66·33	7,422	12·52	843	...
					19			(b) 104	1,009	2,171	59·41				
Sitaram Das	„ ...	„ ...	„ ...	31		19	13	(a) 34	424	863	19·40				
Munshi Ellias Ali	Barpeta ...	„ ...	„ ...	65	20	20	20	(a) 81	1,072	1,826	45·95	6,778	8·64	1,569	333
Sib Nath Deka	„ ...	„ ...	„ ...	70		...	20	(a) 68	924	1,403	45·50			2,209	1,547
Sib Ram Das	Beltola ...	„ ...	Gauhati ...	582	13	13	13	52	780	860	(a) 28·96	1,217	15·22	4,102	2,606
											(c) 0·55				
Tita Ram Datta	Palasbari ...	„ ...	„ ...	69	22	22	22	(a) 58	959	1,178	36·05	4,820	4·78	9,726	14,516
Mantan Ram Das	Chhaygaon ...	„ ...	„ ...	77	20	20	20	(a) 55	664	1,091	29·41	4,414	4·26	4,770	7,045
Naomal Das	Boko ...	„ ...	„ ...	30	17	17	13	36	431	616	(a) 18·76	3,319	3·61	1,104	1,226
											(c) 2·80				
Bati Ram Das	Pati Darrang...	„ ...	„ ...	104	20	20	20	(a) 49	304	509	17·27	1,702	6·49	9,453	6,816
Konnath Deka	Rangiya ...	„ ...	„ ...	130	26	26	26	(a) 70	700	895	24·69	3,127	5·05	11,028	11,894
Sib Nath Deka	Barkhetri ...	„ ...	„ ...	46		17	17	(a) 58	895	1,315	40·86			432	452
Mahammad Elias	„ ...	„ ...	„ ...	8	17	...	4	(a) 5	83	148	3·42	5,788	7·27	142	18
Joy Ram Deka	„ ...	„ ...	„ ...	58		...	17	(a) 40	546	841	21·50			817	547

(a) Independent-check lines in cadastral area.
(b) „ „ extension survey.
(d) With superior officers in extension survey.

APPENDIX E—*concluded.*

Name of Supervisor Kanungo or Surveyor.	Circle.	District.	Subdivision.	Area cadastrally surveyed.												
				Number of villages tested.	Total number of Mandals or Patwaris.	Number of Mandals or Patwaris		Testing by check-lines.						Testing without check-lines.		
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square miles of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Jiu Ram Das	Hajo ...	Kamrup ...	Gauhati ...	56	21	21	21	(*a*) 44	729	790	23·46	4,582	6·21	965	568	
Ramrath Datta	„ ...	„ ...	„ ...	60				(*a*) 41	566	757	21·06			3,805	1,204	
Santi Ram Das	Nalbari ...	„ ...	„ ...	64	19	19	18	(*a*) 2	31	25	7·58	1,261	3·84	11,093	2,430	
Rangdeb Sarma	Baroma ...	„ ...	„ ...	79	18	18	18	(*a*) 16	208	192	9·52	3,289	1·85	3,701	669	
								(*c*) 5	63	62	3·20					
Jagat Ram Das	Tambulpur ...	„ ...	„ ...	51	17	17	17	(*a*) 68	551	928	33·88	1,896	13·98	6,400	6,347	
								(*b*) 13	123	197	7·56					
Chandra Kanta Sarkar ...	Patharughat ...	Darrang ...	Mangaldai...	100	20	20	20	(*a*) 111	1,276	1,930	56·00	3,483	10·29	1,440	852	
								(*c*) 12	119	144	14·50					
Kalamani Das	Mangaldai ...	„ ...	„ ...	80	22	22	22	(*a*) 105	831	1,363	47·15	2,836	10·64	1,594	3,920	
								(*c*) 6	48	56	2·27					
Uma Kanta Saharia (offg.) ...	Kalaigaon ...	„ ...	„ ...	22	24	...	18	(*a*) 23	160	237	7·93	2,206	9·74	308	312	
Ram Mal Das	„ ...	„ ...	„ ...	96		24	24	(*a*) 57	405	353	25·66			3,785	2,555	
								(*c*) 18	101	136	5·57					

Jagannath Deka ...	...	Bengbari ...	„	...	„	...	70	16	16	16	(a)	76	650	1,501	30·40	1,786	10·89	2,420	3,722
Ganga Ram Das ...	...	Eastern ...	„	...	Tezpur	...	49	14	14	14	(a)	69	542	619	27·44	2,643	6·65	1,853	1,721
Manu Ram Talukdar	...	Western ...	„	...	„	...	69	21	21	21	(a)	71	490	694	31·47	2,732	9·33	2,779	3,458
											(b)	12	136	346	8·38				
											(c)	4	41	71	4·15				
Pua Ram Mahanta ...	...	Town ...	Nowgong	...	Nowgong	...	211	32	32	32	(a)	100	1,225	2,395	54·34	8,702	4·00	25,580	1,980
Molan Chandra Bora	...	Silghat ...	„	...	„	...	147	21	21	21	(a)	102	989	1,723	40·00	5,337	4·79	4,447	1,255
Tara Nath Bora ...	...	Doboka ...	„	...	„	...	160	18	18	18	(a)	76	1,031	1,767	52·35	2,721	12·31	13,806	5,709
Mina Ram Das ...	...	Roha ...	„	...	„	...	204	21	21	21	(a)	117	1,203	1,832	56·71	5,451	6·66	5,452	4,741
Govinda Ram Datta	...	Dhing ...	„	...	„	...	138	22	22	22	(a)	112	1,516	3,084	70·08	8,795	5·10	8,722	6,535
Kala Ram Bardalai (offg.)	...	Gerua ...	„	...	„	...	95	17	17	17	(a)	87	968	2,568	57·23	4,723	7·75	3,540	2,642
Surath Chandra Bora	...	„ ...	„	...	„	...	...		...	...	...		...	...	...			1,933	1,112
Ramrath Datta ...	...	Ghugua ...	„	...	„	...	60	18	18	18	(a)	79	910	1,407	43·13	4,970	8·13	187	294
Jiu Ram Das ...	...	„ ...	„	...	„	...	60		18	18	(a)	43	444	653	20·04			3,244	2,138
Gazendra Narain Das	...	Mayang ...	„	...	„	...	92	11	11	11	(a)	82	866	1,300	41·80	2,587	10·34	9,498	4,205
Durga Ram Datta ...	...	Northern ...	Sibsagar	...	Golaghat	...	83	25	25	25	(a)	54	683	1,044	25·68	3,892	6·17	5,157	6,282
											(b)	22	190	290	11·87			684	581
											(d)	2	23	37	1·28			...	...
Bhakat Ram Datta ...	...	Southern ...	„	...	„	...	99	21	...	21	(a)	30	316	367	15·20	1,670	6·75	2,953	1,045
											(b)	2	19	12	0·84				
											(d)	...	...	...	39·60				
Hara Nath Datta (offg.)	...	„ ...	„	...	„	...	11		...	7	(a)	2	26	50	1·17				
											(b)	2	12	15	0·42				

(a) Independent-check lines in cadastral area.
(b) „ „ extension survey.
(c) With superior officers in cadastral area.
(d) „ „ extension survey.

APPENDIX E—*continued.*

Name of Supervisor Kanungo or Surveyor.	Circle.	District.	Subdivision.	Area cadastrally surveyed.												
				Number of villages tested.	Total number of Mandals or Patwaris.	Number of Mandals or Patwaris		Testing by check-lines.						Testing without check-lines.		
						Whose papers were examined.	Whose field-work was tested.	Number of lines.	Number of *katans*	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Kati Ram Das	Eastern ...	Sibsagar ...	Jorhat ...	21	19	19	19	(a) 25	185	334	9·14	2,057	9·82	1,055	522	
								(b) 10	103	146	5·84					
Bhola Ram Datta (offg.) ...	„ ...	„ ...	„ ...	23				(a) 27	297	490	12·16					
								(b) 10	105	197	4·42					
Mahi Ram Das (Senior) ...	North-Western	„ ...	„ ...	30	23	23	23	(a) 38	390	918	20·10	1,953	8·20	7,728	4,154	
								(b) 8	93	129	4·95					
Mahi Ram Das (Junior) ...	South-Western	„ ...	„ ...	36	18	18	18	(a) 88	505	899	31·66	1,728	11·72	1,781	1,071	
								(c) 1	4	4	0·89					
Shib Nath Sarma	Majuli ...	„ ...	„ ...	109	19	19	19	(a) 197	2,028	3,930	97·71	5,193	12·04	752	607	
								(c) 2	28	48	0·71					
Lalitram Chaudhuri ...	Western ...	„ ...	Sadr ...	175	24	24	24	(a) 150	1,102	1,840	57·77	2,128	17·37	14,757	9,841	
Sibram Bora	Eastern ...	„ ...	„ ...	128	26	26	19	(a) 43	329	710	17·77	2,592	6·19	3,237	12,563	
								(d) 29	...	...	10·74					
Manpur Gagai (offg.) ...	„ ...	„ ...	„ ...	11		...	8	(a) 17	189	360	7·31					

Gobinda Nath Rai ...	...	Central ...	,, ...	,, ...	105	21	21	21	(a)	62	424	542	26·54	2,340	11·47	1,401	2,674	
									(b)	28	250	157	15·41					
Moheswar Das ...	...	Dibrugarh ...	Lakhimpur ...	,, ...	102	15	15	15	(a)	44	264	456	13·42	1,035	8·58	1,448	2,163	
Lakshmi Kanta Das	...	Chabua ...	,, ...	,, ...	56	14	14	14	(a)	83	695	1,645	32·68	1,801	11·62	1,453	2,343	
Shahabuddin Ahmed	...	North Lakhimpur.	,, ...	North Lakhimpur.	4	20	20	20	(b)	15	187	264	7·56	2,559	12·82	1,939	2,538	
Bhabi Ram Das ...	...	,, ...	,, ...	,, ...	111		20	...	(a)	111	1,097	1,846	43·70					
Samudra Narayan Das	...	...	,, ...	Gauhati ...	39	210	117	33	(a)	30	375	550	16·98	...	...	234	117	
									(b)	25	309	298	14·00					
Chandreswar Chengkakati	...	...	,, ...	Dibrugarh ...	...	29	...	...			213	140	108	11·91	...	...	...	...	Lines run in surveying waste land grants.

(a) Independent check-lines in cadastral area.

(b) ,, ,, extension survey.

(c) With superior officers in cadastral area.

(d) ,, ,, extension survey.

APPENDIX F.

Work Statement of Tahsildars for the year 1898-99.

Name of Tahsildar.	Name of Tahsil.	District.	Subdivision.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area of concealed cultivation discovered, in acres.	Area, in acres, found wrongly classified.		
				Number of villages tested.	Total number of Mandals or Patwaris.	Number of Mandals or Patwaris.		Testing by check-lines.						Testing without check-lines.		Total number of Mandals or Patwaris.	Number of Mandals or Patwaris.		Total area as returned by Mauzadars, in acres.	Total area as found on remeasurement, in acres.	Percentage of error in Mauzadars' papers.		*Basti* shown as		
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Rupit* shown as *faringati* (acres).
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Ratan Ali Sarkar	Sadr ...	Sylhet ...	North Sylhet	180	26	26	14	9	34	46	4·14	327	8·10	211	616	...	...	...	...	...	...	...	...	...	...
Haranarayan Sen	Kanairghat ...	,, ...	,,	...	20	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ratna Kanta Barua	Bajali ...	Kamrup ...	Barpeta ...	23	20	16	6	21	224	254	9·43	3,835	2·02	100	88	...	...	...	...	...	...	...	...	...	...
Banga Chandra Chaudhuri	,, ...	,, ...	,, ...	5		...	5	5	68	106	2·61			42	75									2	...
Keshab Chandra Singha	Roha ...	,, ...	,, ...	20	17	17	11	66	532	1,458	33·95	6,102	3·56	523	...	1	...	...	...	...	...	2	48	...	50
Shamlal Chaudhuri	Palasbari ...	,, ...	Gauhati ...	26	22	13	19	10	162	294	6·37	4,820	0·84	1,240	636	1	1	1	...	...	...	4	...	...	...
Kaliram Chaudhuri	Chhaigaon ...	,, ...	,, ...	5	9	...	3	7	84	119	4·25	1,564	1·74	...	...	5	...	2	225	247	1·09	...	...	...	...
Banga Chandra Chaudhuri	Patidarrang ...	,, ...	,, ...	29	20	20	13	3	22	55	0·95	1,702	0·35	703	1,303	...	...	...	...	...	...	10	...	...	5
Uday Chandra Barua	Rangiya ...	,, ...	,, ...	24	26	23	26	24	302	319	10·00	3,127	2·04	597	3,018	...	...	...	...	...	...	...	...	...	...
Bangsidhar Barua	Nalbari ...	,, ...	,, ...	15	19	11	8	...	...	...	...	1,261	..	3,260	125	...	...	...	...	...	...	...	...	...	15
Radhanath Barua	Hajo ...	,, ...	,, ...	50	38	38	30	28	530	840	21·83	10,370	1·34	...	...	...	...	...	...	...	...	18	...	9	171
Gangaram Das	Baroma ...	,, ...	,, ...	9	18	18	7	18	185	168	5·36	3,289	1·04	784	2,202	...	...	...	...	...	...	6	...	2	700
Joyram Deka	Tambulpur ...	,, ...	,, ...	40	17	10	11	27	378	521	16·38	1,895	5·53	1,072	832	3	...	2	95	96	1·01	3	...	8	9
Ghanakanta Chaliha	Kaiaigaon ...	Darrang ...	Mangaldai ...	10	24	24	5	8	56	75	3·09	2,205	0·89	295	58	...	...	...	...	...	...	...	...	...	...
Rabi Chandra Sarma	Tezpur ...	,, ...	Tezpur ...	58	16	16	9	22	82	434	9·58	2,674	2·29	68	93	5	5	3	423	428	1·15	1	...	...	...
Ganganath Sarma	Chutia ...	,, ...	,, ...	7	12	12	5	7	83	93	3·48	1,801	1·23	...	...	4	4	4	...	...	...	...	...	...	...
Chandra Kanta Barua	Samaguri ...	Nowgong ...	Nowgong ...	4	14	14	12	...	...	...	...	...	...	85	40	...	...	...	...	...	...	...	...	...	...
Santiram Hazarika	Town ...	,, ...	,, ...	1	17	17	1	39	11	18	0·49	3,502	0·09	...	...	1	...	...	...	...	...	...	...	...	...
Guanhash Goswami	Roha ...	,, ...	,, ...	15	21	15	14	15	462	289	9·00	5,451	1·06	159	381	1	1	...	...	...	...	...	3	2	5
Dandadhar Barua	Golaghat ...	Sibsagar ...	Golaghat ...	12	14	14	8	7	55	129	2·39	1,403	1·09	187	626	4	1	1	7	8	14·28	...	...	...	...
Guruprasad Kakati	Athgaon ...	,, ...	,, ...	3	12	12	2	7	61	78	3·29	1,001	2·16	...	...	3	3	...	..	...	...	...	...	...	...
Bisturam Barua	Jorhat ...	,, ...	Jorhat ...	8	18	15	5	9	77	151	21·55	1,009	13·66	...	...	...	...	...	...	...	...	...	...	...	...
Radhikaprasad Datta Barua	Sadr ...	,, ...	Sadr ...	2	16	...	2	2	12	20	0·72	1,512	0·30	...	...	...	...	...	...	...	...	...	...	...	...
Padmanath Barua	Dibrugarh ...	Lakhimpur ...	Dibrugarh ...	...	15	...	...	...	...	...	...	...	...	...	...	4	4	1	45	51	13·55	...	...	...	...
Total	.....	.....	.....	546	431	347	216	334	3,470	5,469	168·86	58,851	1·83	9,326	10,093	32	19	14	795	830	4.40	44	51	28	955

APPENDIX G.

Work Statement of Mauzadars and Tahsil Mohurrirs for the year 1898-99.

District.	Subdivision.	Total number of Mauzadars and Muharrirs who did any testing.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area in acres of concealed cultivation discovered.	Area found wrongly classified.			Remarks.
			Number of villages tested.	Total number of Mandals.	Number of Mandals		Testing by check-lines.						Testing without check-lines.		Total number of Mandals.	Number of Mandals		Total area in acres as returned by Mauzadars.	Total area in acres found on remeasurement.	Percentage of errors in Mauzadars' papers.		*Basti* shown as		
					Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Rupit* shown as *faringati* (acres).	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Goalpara	Dhubri	6	56	8	8	8	12	142	259	7·92	8,879	0·57	250	1,240	10	10	4	1,348	1,336	0·89	3	...	...	...	
Kamrup	Gauhati	1	1	4	...	1	1	16	15	0·44	602	0·46	26	13	1	...	...	...	...	...	...	...	...	...	
,, ...	Barpeta	7	40	22	18	15	40	419	712	20·91	7,468	1·79	1,086	471	9	9	9	625	623	0·32	...	...	...	...	
Darrang	Mangaldai	10	58	64	30	27	76	531	923	33·91	5,962	3·64	1,264	1,562	6	6	6	328	328	...	...	...	...	...	
,, ...	Tezpur	3	22	12	12	6	10	97	163	4·58	2,718	1·08	462	225	5	5	5	876	896	2·24	...	...	...	...	
Nowgong	Nowgong	8	52	50	34	18	19	420	543	19·27	5,502	2·20	1,098	2,291	3	3	1	...	...	...	3	...	...	...	
Sibsagar	Golaghat	3	9	15	9	5	4	12	18	5·40	480	0·72	340	504	2	2	2	171	194	13·05	...	...	...	...	
,, ...	Jorhat	9	49	51	26	30	43	419	719	19·55	6,375	1·96	1,023	995	4	3	2	286	296	5·74	...	...	...	...	
,, ...	Sadr	3	11	17	17	5	15	172	177	8·49	1,387	3·92	80	240	...	...	...	...	...	...	...	...	...	...	
Lakhimpur	Dibrugarh	4	4	8	6	3	11	56	133	3·59	677	3·39	12	450	8	7	7	1,150	1,211	...	3	...	...	...	
,, ...	North Lakhimpur	3	3	20	7	4	3	35	58	0·56	2,559	0·14	...	...	13	13	...	...	...	...	...	...	...	...	
Total	.....	57	305	251	167	122	234	2,319	3,720	124·62	42,699	1·87	5,641	7,991	61	58	36	4,784	4,884	2·09	9	...	...	...	

APPENDIX H.

Statement showing the condition of Survey-marks on the 30th June 1898.

Subdivision.	Classification.	Total number (columns 6+7+8).	Total number found in good order by Mandals and Patwaris.	Total number found not in good order by Mandals or Patwaris.		Total of columns 4 and 5 or total in good order on 30th June 1898.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Karimganj ...	(*a*) Trijunction prisms	99	97	2	...	99	...
	(*b*) Traverse stations shown by mounds and *simul* boughs	1,954	1,176	456	322	1,632	...
	(*d*) Prisms on boundaries of grants, etc. ..	124	124	...	...	124	...
	(*e*) Brick pillars of grants, etc. ...	152	43	...	109	43	...
	(*f*) Country stones ditto ...	97	97	...	...	97	...
	(*g*) Pipes ditto ditto ...	52	36	6	10	42	...
	(*h*) Mounds ditto ...	2,215	1,689	255	271	1,944	...
	Total Karimganj	4,693	3,262	719	712	3,981	...
North Sylhet—Jaintia.	(*a*) Trijunction prisms	685	622	...	...	622	63
	(*b*) Traverse stations shown by mounds and *simul* boughs	359	8	...	...	8	351
	(*c*) Kanungos' mounds, including jungle mounds	42	42	...	...	42	...
	(*d*) Prisms on boundaries of grants, etc. ...	185	163	...	...	163	22
	(*e*) Concrete blocks ditto ...	479	395	...	53	395	31
	(*f*) Country stones ditto ...	10,618	9,859	49	136	9,908	574
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total Jaintia	12,368	11,089	49	189	11,138	1,041
Goalpara ...	(*a*) Trijunction prisms	384	381	2	...	383	1
	(*b*) Traverse stations shown by mounds and *simul* boughs	2,403	1,922	420	60	2,342	1
	(*c*) Kanungos' mounds, including jungle mounds	49	49	...	...	49	...
	(*d*) Prisms on boundaries of grants, etc. ...	...	...	...	...	...	...
	(*e*) Concrete blocks ditto ...	...	...	...	...	...	...
	(*f*) Country stones ditto ...	...	...	...	...	...	...
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total Goalpara	2,836	2,352	422	60	2,774	2

APPENDIX H—*continued.*

Subdivision.	Classification.	Total number (columns 6+7+8).	Total number found in good order by Mandals and Patwaris.	Total number found not in good order by Mandals or Patwaris.		Total of columns 4 and 5, or total in good order on 30th June 1898.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Barpeta ...	(*a*) Trijunction prisms	984	843	56	34	899	51
	(*b*) Traverse stations shown by mounds and *simul* boughs	5,691	1,124	3,147	970	4,271	450
	(*c*) Kanungos' mounds, including jungle mounds	1,345	363	790	157	1,153	35
	(*d*) Prisms on boundaries of grants, etc. ...	264	264	...	...	264	...
	(*e*) Concrete blocks ditto ...	886	886	...	...	886	...
	(*f*) Country stones ditto ...	1,545	1,530	...	15	1,530	...
	(*g*) Mounds ditto ...	206	141	30	35	171	...
	Total Barpeta	10,921	5,151	4,023	1,211	9,174	536
Gauhati ...	(*a*) Trijunction prisms	2,954	2,823	42	28	2,865	61
	(*b*) Traverse stations shown by mounds and *simul* boughs	5,237	2,150	1,921	765	4,071	401
	(*c*) Kanungos' mounds, including jungle mounds	5,235	2,404	1,366	971	3,770	494
	(*d*) Prisms on boundaries of grants, etc. ...	3,285	3,217	10	49	3,227	9
	(*e*) Concrete block ditto ..	6,782	6,365	26	383	6,391	8
	(*f*) Country stones ditto ...	7,044	6,995	4	...	6,999	45
	(*g*) Mounds ditto ...	1,096	856	103	119	959	18
	Total Gauhati	31,633	24,810	3,472	2,315	28,282	1,036
Mangaldai ...	(*a*) Trijunction prisms	1,536	1,522	...	...	1,522	14
	(*b*) Traverse stations shown by mounds and *simul* boughs	6,866	3,446	3,009	209	6,455	202
	(*c*) Kanungos' mounds, including jungle mounds	170	49	49	72	98	...
	(*d*) Prisms on boundaries of grants, etc. ...	669	669	...	...	669	...
	(*e*) Concrete blocks ditto ...	1,422	1,422	...	...	1,422	...
	(*f*) Country stones ditto ...	467	467	...	...	467	...
	(*g*) Mounds ditto ...	132	86	3	43	89	...
	Total Mangaldai	11,262	7,661	3,061	324	10,722	216
Tezpur ...	(*a*) Trijunction prisms	174	361	36	17	397	3
	(*b*) Traverse stations shown by mounds and *simul* boughs	2,710	1,228	1,363	79	2,591	40
	(*c*) Kanungos' mounds, including jungle mounds	114	51	52	9	103	2
	(*d*) Prisms on boundaries of grants, etc....	35	31	4	...	35	...
	(*e*) Concrete blocks ditto ...	1,247	1,220	11	16	1,231	...
	(*f*) Country stones ditto ...	348	341	1	6	342	...
	(*g*) Mounds ditto ...	6	...	...	6	...	...
	Total Tezpur	4,877	3,232	1,467	133	4,699	45

APPENDIX H—*continued.*

Subdivision.	Classification.	Total number (columns 6+7+8).	Total number found in good order by Mandals or Patwaris.	Total number found not in good order by Mandals or Patwaris		Total of columns 4 and 5, or total in good order on 30th June 1898.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Nowgong ...	(*a*) Trijunction prisms	2,242	2,058	127	35	2,185	22
	(*b*) Traverse stations shown by mounds and *simul* boughs	13,149	6,610	4,980	1,332	11,590	227
	(*c*) Kanungos' mounds, including jungle mounds	479	326	111	32	437	10
	(*d*) Prisms on boundaries of grants, etc....	534	500	32	2	532	...
	(*e*) Concrete blocks ditto ...	300	283	17	...	300	...
	(*f*) Country stones ditto ...	227	227	...	...	227	...
	(*g*) Mounds ditto ...	789	545	37	207	582	...
	Total Nowgong	17,720	10,549	5,304	1,608	15,853	259
Golaghat ...	(*a*) Trijunction prisms	558	549	...	9	549	...
	(*b*) Traverse stations shown by mounds and *simul* boughs	5,223	2,841	1,205	1,177	4,046	...
	(*c*) Kanungos' mounds, including jungle mounds	260	233	27	...	260	...
	(*d*) Prisms on boundaries of grants, etc. ...	224	224	...	...	224	...
	(*e*) Concrete blocks ditto ...	1,046	1,045	...	1	1,045	...
	(*f*) Country stones ditto ...	78	78	...	...	78	...
	(*g*) Mounds ditto ...	92	92	...	...	92	...
	Total Golaghat	7,481	5,062	1,232	1,187	6,294	...
Jorhat ...	(*a*) Trijunction prisms	945	944	...	1	944	...
	(*b*) Traverse stations shown by mounds and *simul* boughs	9,426	4,526	3,149	1,042	7,675	709
	(*c*) Kanungos' mounds, including jungle mounds	359	242	108	9	350	...
	(*d*) Prisms on boundaries of grants, etc....	827	827	...	...	827	...
	(*e*) Concrete blocks ditto ...	2,125	2,155	...	...	2,125	...
	(*f*) Country stones ditto ...	258	28	...	...	258	...
	(*g*) Mounds ditto ...	27	27	...	...	27	...
	Total Jorhat	13,967	8,949	3,257	1,052	12,206	709
Sibsagar ...	(*a*) Trijunction prisms	1,023	995	4	1	999	23
	(*b*) Traverse stations shown by mounds and *simul* boughs	10,778	5,109	2,312	1,997	7,421	1,360
	(*c*) Kanungos' mounds, including jungle mounds	181	151	16	14	167	...
	(*d*) Prisms on boundaries of grants, etc....	852	852	...	...	852	...
	(*e*) Concrete blocks ditto ...	1,074	1,074	...	...	1,074	...
	(*f*) Country stones ditto ...	...	...	...	...	...	...
	(*g*) Mounds ditto ...	51	51	...	...	51	...
	Total Sibsagar Sadr	13,959	8,232	2,332	2,012	10,564	1,383

APPENDIX H—*concluded.*

Subdivision.	Classification.	Total number (columns 6+7+8).	Total number found in good order by Mandals or Patwaris.	Total number found not in good order by Mandals or Patwaris.		Total of columns 4 and 5 or total in good order on 30th June 1898.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
North Lakhimpur	(*a*) Trijunction prisms	198	184	14	...	198	...
	(*b*) Traverse stations shown by mounds and *simul* boughs	1,612	887	720	5	1,607	...
	(*c*) Kanungos' mounds, including jungle mounds	56	25	31	...	56	...
	(*d*) Prisms on boundaries of grants, etc....	4	4	...	...	4	...
	(*e*) Concrete blocks ditto ...	239	239	...	...	239	...
	(*f*) Country stones ditto ...	50	30	20	...	50	...
	(*g*) Mounds ditto ...	150	100	50	...	150	...
	Total North Lakhimpur	2,309	1,469	835	5	2,304	...
Dibrugarh	(*a*) Trijunction prisms	402	310	76	16	386	...
	(*b*) Traverse stations shown by mounds and *simul* boughs	2,926	979	1,801	146	2,780	...
	(*c*) Kanungos' mounds, including jungle mounds	513	279	221	13	500	...
	(*d*) Prisms on boundaries of grants, etc. ...	331	331	...	...	331	...
	(*e*) Concrete blocks ditto ...	859	859	...	...	859	...
	(*f*) Country stones ditto ...	...	...	...	...	...	...
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total Dibrugarh	5,031	2,758	2,098	175	4,856	...
Total	(*a*) Trijunction prisms	12,427	11,689	359	141	12,048	238
	(*b*) Traverse stations shown by mounds and *simul* boughs	68,334	32,006	24,483	8,104	56,489	3,741
	(*c*) Kanungos' mounds, including jungle mounds	8,803	4,214	2,771	1,277	6,985	541
	(*d*) Prisms on boundaries of grants, etc....	7,334	7,206	46	51	7,252	31
	(*e*) Concrete blocks ditto ...	16,611	15,956	54	562	16,010	39
	(*f*) Country stones ditto ...	20,784	19,918	80	167	19,998	619
	(*g*) Mounds ditto ...	4,764	3,587	478	681	4,065	18
	Grand total	139,057	94,576	28,271	10,983	1,22,847	5,227

APPENDIX I.

Statement showing the Area of each Supervisor Kanungo's Circle in the cadastrally-surveyed portion of the Province.

Subdivision.	Name of Kanungo's Circle.	Nisf-khiraj.	Lakhiraj.	Permanently-settled.	Khiraj-settled.	Khiraj-unsettled.	Grants.	Total.	Number of Mandals' or Patwaris' circles.
1	2	3	4	5	6	7	8	9	10
		Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	
Hailakandi ...	Hailakandi	...	0·75	...	103·30	9·44	55·31	168·80	19
	Saraspur	...	...	...	40·32	10·86	51·65	102·83	10
	Total Hailakandi	...	0·75	...	143·62	20·30	106·96	271·63	29
Silchar	Chatlahaor	...	...	...	44·41	23·18	75·68	143·27	10
	Katigora	...	0·33	...	66·61	45·61	32·03	144·56	15
	Barakpar	...	0·09	...	40·93	39·34	18·91	99·27	8
	Udharband	...	1·32	...	38·68	19·89	67·55	127·44	12
	Lakhipur	...	...	...	70·42	11·36	43·17	124·95	11
	Sonapur	...	0·44	...	88·96	10·93	22·89	123·22	11
	Total Silchar	...	2·18	...	350·01	150·31	260·21	762·61	68
	Total Cachar	...	2·93	...	493·63	170·61	367·17	1,034·24	97
Karimganj ...	Pratabgarh	...	...	...	30·49	28·74	59·85	119·08	4
North Sylhet (Jaintia)	Kanairghat	...	8·27	1·97	101·63	17·39	6·80	128·96	16
	Jaintiapur	0·12	0·46	0·18	64·40	39·33	·06	104·55	10
	Goainghat (No. I)	...	9·14	0·98	76·02	53·50	2·65	142·29	14
	Goainghat (No. II)	...	0·43	0·13	60·48	44·44	2·98	108·46	12
	Total Jaintia	0·12	11·20	3·26	302·53	154·66	12·42	484·26	52
	Total Sylhet	0·12	11·20	3·26	333·02	183·40	72·34	603·34	56
Dhubri	Bijni	...	...	...	46·12	152·16	...	198·28	17
Barpeta	Bajali	22·82	0·71	...	63·80	72·11	...	159·44	22
	Barpeta	8·44	0·77	...	19·75	118·90	...	147·86	20
	Roha	22·14	0·20	...	32·92	185·09	...	240·35	19
	Total Barpeta	53·40	1·68	...	116·47	376·10	...	547·65	61
Gauhati	Beltala	3·16	0·56	...	30·70	50·95	1·81	87·18	13
	Palasbari	8·81	2·49	...	61·96	43·92	...	117·18	22
	Boko	0·35	...	...	21·61	90·59	...	113·05	17
	Chhaigaon	2·66	1·16	...	36·81	79·36	1·58	121·57	20
	Hajo	28·09	19·62	...	34·02	52·83	1·57	136·13	21
	Barkhetri	3·41	0·49	...	48·76	57·08	...	79·74	17
	Rangiya	47·33	4·03	...	69·78	71·65	0·71	193·50	26
	Nalbari	23·45	1·45	...	70·06	22·26	0·72	117·94	19
	Tambulpur	4·11	0·45	...	37·77	124·14	0·68	167·15	17
	Baroma	14·96	3·36	...	57·49	64·23	...	140·04	18
	Patidarrang	39·79	10·79	...	53·17	41·13	0·80	145·68	20
	Total	276·62	44·40	...	492·33	698·14	7·87	1,419·16	210
	Total Kamrup	230·02	46·08	...	608·06	1,074·24	7·87	1,966·81	271

APPENDIX I—*continued.*

Subdivision	Name of Kanungo's Circle.	Nisf-khiraj.	Lakhiraj.	Permanently-settled.	Khiraj-settled.	Khiraj-unsettled.	Grants.	Total.	Number of Mandals' or Patwaris' circles.
1	2	3	4	5	6	7	8	9	10
		Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	
Mangaldai ...	Mangaldai	7·38	1·73	...	55·96	87·09	5·18	157·34	22
	Kalaigaon	32·95	2·04	...	72·00	127·91	12·64	247·54	24
	Patharughat	4·47	0·58	...	51·79	80·21	0·32	137·37	20
	Bengbari	...	0·09	...	46·65	126·62	8·54	181·90	16
	Total	44·80	4·44	...	226·40	421·83	26·68	724·15	82
Tezpur	Eastern	1·34	1·23	...	41·97	60·17	2·42	107·13	14
	Western	1·27	0·27	...	67·06	77·37	0·46	146·43	21
	Total	2·61	1·50	...	109·03	137·54	2·88	252·56	35
	Total Darrang	47·41	5·94	...	335·43	559·37	29·56	977·71	117
Nowgong	Town	1·73	0·76	...	75·80	101·12	1·47	181·88	32
	Silghat	3·16	2·35	...	67·52	65·55	10·30	148·88	21
	Doboka	0·12	0·25	...	33·65	78·14	10·69	122·85	18
	Roha	0·03	0·02	...	34·81	113·91	1·54	150·32	21
	Dhing	3·84	0·04	...	45·09	120·08	0·40	169·85	22
	Gerua	...	...	...	14·14	113·71	...	127·85	17
	Ghugua	0·12	0·19	...	28·19	87·20	...	115·70	18
	Mayang	...	...	...	10·38	83·06	0·83	94·27	11
	Total	8·40	3·61	...	309·58	763·77	25·24	1,110·60	160
Golaghat	Northern	0·69	0·41	...	92·27	75·35	21·46	190·18	25
	Southern	0·20	1·42	...	91·61	46·26	18·98	158·47	21
	Total	0·89	1·83	...	183·88	121·61	40·44	348·65	(a)46
Jorhat	Eastern	0·55	0·23	...	82·57	62·44	22·19	167·98	19
	North-western	0·93	9·00	...	99·82	51·20	35·33	196·28	23
	South-western	1·26	5·46	...	72·99	41·69	42·25	163·65	18
	Majuli	0·03	34·92	...	21·19	93·54	0·68	150·36	19
	Total	2·77	49·61	...	276·57	248·87	100·45	678·27	(b)79
Sibsagar sadr ...	Eastern	0·23	2·91	...	75·99	169·12	30·98	288·23	26
	Central	0·44	·51	...	73·45	99·22	12·26	185·87	21
	Western	0·47	·23	...	95·25	67·79	40·09	203·83	24
	Total	1·14	3·65	...	244·69	336·12	92·33	677·93	71
	Total Sibsagar	4·80	55·09	...	705·14	706·60	233·22	1,704·85	196
North Lakhimpur ...	North Lakhimpur	0·37	2·67	...	40·99	39·39	0·51	83·93	20
Dibrugarh ...	Chabua	1·36	0·10	...	48·71	46·12	11·10	107·39	14
	Dibrugarh	0·24	...	...	54·62	22·56	31·17	108·59	15
	Total	1·60	0·10	...	103·33	68·68	42·27	215·98	29
	Total Lakhimpur	1·97	2·77	...	144·32	108·07	42·78	299·91	49

(a) Exclusive of 6 mandals of Ahatagura.

(b) Inclusive of 6 mandals of Ahataguri.

APPENDIX J.

Statement showing Advances and Recoveries on account of Cadastral Survey Operations during 1898-99.

District.	Classification of Advances.	Outstanding on the 31st March 1898.	Advances made during 1898-99.	Total for recovery up to the 31st March 1899.	Recovered during the year 1898-99.	Balance outstanding on the 31st March 1899.
1	2	3	4	5	6	7
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Cachar.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the professional party.	60,990 1 10	4,131 14 7	65,122 0 5	...	65,122 0 5
	(3) Advances for demarcation of grants and permanently-settled *lakhiraj* and *nisfkhiraj* estates—					
	(*c*) Pay of demarcation establishment.	4,247 8 4	7,083 14 0	11,331 6 4	...	11,331 6 4
	Total	65,237 10 2	11,215 12 7	76,453 6 9	...	76,453 6 9
Sylhet.	Pratabgarh—					
	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the professional party.	100 0 0	...	100 0 0	...	100 0 0
	(3) Advances for demarcation of grants and permanently-settled *lakhiraj and nisf-khiraj* estates—					
	(*a*) Country stones ...	1,941 0 0(*a*)	6 12 0	1,947 12 0	65 3 0	1,882 9 0
	(*b*) Prisms	1,186 3 0(*a*)	...	1,186 3 0	33 8 3	1,152 10 9
	(*c*) Pay of demarcation establishment.	220 7 6	390 12 4	611 3 10	31 5 9	579 14 1
	Jaintia—					
	(1) Advances for demarcation recoverable from landholhers in the areas surveyed by the professional party.	332 9 8(*a*)	...	332 9 8	17 13 6	314 12 2
	(3) Advances for demarcation of grants and permanently-settled *lakhiraj* and *nisf-khiraj* estates—					
	(*b*) Prisms	106 13 11	...	106 13 11	106 13 11	...
	(*c*) Pay of demarcation establishment.					
	Ilam—					
	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the professional party.	10,943 1 7	3,760 13 7	14,703 15 2	116 2 0	14,587 13 2
	(3) Advances for demarcation of grants and permanently-settled *lakhiraj* and *nisf-khiraj* estates—					
	(*b*) Stone prisms ...	1,432 11 0	875 0 0	2,307 11 0	...	2,307 11 0
	Total	16,262 14 8	5,033 5 11	21,296 4 7	370 14 5	20,925 6 2

(*a*) Revised figures.

APPENDIX J—*continued.*

District.	Classification of Advances.	Outstanding on the 31st March 1898.	Advances made during 1898-99.	Total for recovery up to the 31st March 1899.	Recovered during the year 1898-99.	Balance outstanding on the 31st March 1899.
1	2	3	4	5	6	7
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Goalpara.	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency.	2,477 8 0	1,441 11 0	3,919 3 0	...	3,919 3 0
Kamrup.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the professional party.	349 14 6	...	349 14 6	...	349 14 6
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency.	5,512 2 4	30 0 0	5,542 2 4	...	5,542 2 4
	(3) Advances for demarcation of grants and permanently-settled *lakhiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	32,595 12 2	...	32,595 12 2	19,937 13 4	12,657 14 10
	(*b*) Prisms					
	(*c*) Pay of demarcation establishment.					
	Total	38,457 13 0	30 0 0	38,487 13 0	19,937 13 4	18,549 15 8
Darrang.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the professional party.	275 1 2(*a*)	...	275 1 2	...	275 1 2
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency.	643 7 11(*a*)	217 13 9	861 5 8	...	861 5 8
	(3) Advances for demarcation of grants, and permanently-settled, *lakhiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	6,779 0 9(*a*)	13 6 0	6,792 6 9	24 1 0	6,768 5 9
	(*b*) Prisms	512 6 9(*a*)	1 2 0	2,513 8 9	...	2,513 8 9
	(*c*) Pay of demarcation establishment.	1,099 8 9(*a*)	...	1,099 8 9	...	1,099 8 9
	Total	11,309 9 4	232 5 9	11,541 15 1	24 1 0	11,517 14 1
Nowgong.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the professional party.	586 6 6	...	586 6 6	172 8 6	413 14 0
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency.	1,078 5 0	33 1 0	1,111 6 0	33 1 0	1,078 5 0
	(3) Advances for demarcation of grants and permanently-settled, *lakhiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	730 4 9	...	730 4 9	279 12 10	450 7 11
	(*b*) Prisms	753 4 9	...	753 4 9	...	753 4 1
	(*c*) Pay of demarcation establishment.	421 5 5	...	421 5 5	...	421 5 5
	Total	3,569 10 5	33 1 0	3,602 11 5	485 6 4	317 5 9

(*a*) Revised figures.

APPENDIX J—*concluded.*

District.	Classification of Advances.	Outstanding on 31st March 1898.	Advances made during 1898-99.	Total for recovery up to the 31st March 1899.	Recovered during the year 1898-99.	Balance outstanding on the 31st March 1899.
1	2	3	4	5	6	7
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Sibsagar.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the professional party.	227 1 6	(*a*) 34 14 0	261 15 6	107 8 7	154 6 11
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency.	2,169 15 2	133 8 0	2,303 7 2	...	2,303 7 2
	(3) Advances for demarcation of grants and permanently-settled, *lakhiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...					
	(*b*) Prisms	25,790 6 3	163 2 0	25,953 8 3	5,319 6 6	20,634 1 9
	(*c*) Pay of demarcation establishment.					
	Total	28,187 6 11	331 8 0	28,518 14 11	5,426 15 1	23,091 15 10
Lakhimpur.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the professional party.	13 14 0	(*b*) 63 14 7	77 12 7	66 14 1	10 14 6
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency.	251 14 0	3 10 0	255 8 0	...	255 8 0
	(3) Advances for demarcation of grants and permanently settled, *lakhiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	1,113 8 6	...	1,113 8 6		
	(*b*) Prisms	162 0 3	...	162 0 3	558 15 5	854 5 8
	(*c*) Pay of demarcation establishment.	137 12 4	...	137 12 4		
	Total	1,679 1 1	67 8 7	1,746 9 8	625 13 6	1,120 12 2
Total.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the professional party.	73,818 2 9	7,991 8 9	81,809 11 6	480 14 8	81,328 12 10
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency.	12,133 4 5	1,859 11 9	13,993 0 2	33 1 0	13,959 15 2
	(3) Advances for demarcation of grants and permanently-settled, *lakhiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ..					
	(*b*) Prisms	81,230 2 5	8,534 0 4	89,764 2 9	26,356 15 10	63,407 2 11
	(*c*) Pay of demarcation establishment.					
	Grand total	1,67,181 9 7	18,385 4 10	1,85,566 14 5	26,870 15 6	1,58,695 14 11

(*a*) The whole amount represents advances on account of demarcation of theodolite stations in the Sibsagar and Golaghat towns.

(*b*) The whole amount represents advances on account of demarcation of theodolite stations in the North Lakhimpur town.

APPENDIX K.

List of Papers communicated to the "Agricultural Ledger" during 1898-99.

Subject.	Description of papers.
1	2
Morsdenia tinctoria—(Bujir, Nowgong).	Descriptive Note by T. Emerson, Esq., I.C.S., Officiating Deputy Commissioner, Nowgong.
Andropogon Sorghum—Juar ...	Ditto „ Babu Dandadhar Barua, Tahsildar, Golaghat.
Ditto	Ditto „ Ditto ditto a second report.
Ditto	Ditto „ S. G. Hart, Esq., I.C.S., Subdivisional Officer, South Sylhet.
Æschynomene aspera	Ditto „ Lieutenant W. M. Kennedy, I.S.C., Officiating Deputy Commissioner, Naga Hills.
Coix Lachryma—Job's-tears ...	Ditto „ D. H. Lees, Esq., I.C.S., Officiating Deputy Commissioner, Kamrup.
Perilla Ocimoides	Ditto „ the Forest Ranger of Lakhimpur.

ASSAM SECRETARIAT PRINTING OFFICE, SHILLONG, REVENUE NO. 172—345—18-8-99.

Resolution on the Report of the Department of Land Records and Agriculture, Assam, for 1898-99.

Extract from the Proceedings of the Chief Commissioner of Assam in the General Department, No. 3305*R., dated Shillong, the* 1*st September* 1899.

Read—

The Annual Report of the Director of Land Records and Agriculture, Assam, for 1898-99.

RESOLUTION.

Mr. Henniker was in charge of the department from the 15th April till the 15th October. Mr. Kershaw, by whom this report is submitted, held charge from the 15th October till the close of the year.

2. These officers between them spent 145 days on tour. Mr. Henniker made a short tour in the rains, when he was chiefly engaged in inspecting the progress of the *ilam* settlement in Sylhet, and during the greater part of the cold season Mr. Kershaw was actively employed in inspecting the work of the mofussil Land Records establishments in the Assam Valley and the Jaintia Parganas. Mr. Basu, Assistant to the Director, was on tour for 190 days and Mr. O'Donel, Superintendent of Land Records, for 306 days. All the Sub-Deputy Collectors spent a sufficient number of days on tour, except Babu Bhola Nath Das and Babu Mohendra Chandra De, the Sub-Deputy Collectors in charge of the sadr subdivision of the Darrang district.

The amount of touring done by supervisor kanungos shows some improvement, but the district of Darrang was the only one in which the prescribed minimum of 200 days on tour was attained by all the supervisor kanungos. The Chief Commissioner considers that this minimum should be strictly insisted upon, and that every supervisor kanungo may reasonably be expected to work up to it. It is not sufficient that the average number of days spent on tour by the supervisor kanungos of a district should exceed 200.

3. There were 56 supervisor kanungos and 1,134 mandals and patwaris employed in the province at the close of the year, as compared with 51 kanungos and 1,062 mandals and patwaris at the close of the preceding year, the increase being caused by the entertainment of additional land records establishments for the Cachar district, and the *ilam* and *khas* estates of Sylhet now under settlement. Out of the total number of mandals and patwaris employed at the close of the year, 1,031 held certificates of proficiency in surveying. The Chief Commissioner is glad to see that the working of the survey schools in the Assam Valley, on which the supply of trained mandals depends, has engaged the special attention of the Officiating Director, and that their results show a considerable improvement.

4. Complaints have been received regarding the working of the rules for the distribution of mandals' pay, which were issued in 1897, in consequence of certain irregularities which came to light in a case of embezzlement in one district. These rules, which were drawn up on the model of similar rules in force in the North-Western Provinces and Oudh, merely prescribe the procedure which the rules of the Civil Account Code require to be followed in the disbursement of all salaries, a relaxation having been allowed with the special sanction of the Comptroller General, so as to admit of mandals' pay being retained unddisbursed for two months. For the successful working of the rules, however, some egree of punctuality on the part of the tahsildars and mauzadars, who are entrusted with the distribution of mandals' pay, is required, and, although this has been impressed upon Deputy Commissioners, it appears that in most of the Assam Valley districts the old unpunctuality and irregularity have been allowed to continue, with the result that heavy arrears have accumulated. Steps are now being taken to clear off these arrears, a slight modification having been made in the rules with this object; but, as the Officiating Director

remarks, "it is hopeless to expect that arrears can, in the future, be avoided if tahsildars and mauzadars, on whom the working of the rules mainly depends, are permitted to exhibit any laxity in the disbursement of pay or the return of acquittance rolls." The Chief Commissioner trusts that District Officers will bear this observation in mind, as any reversion to the former system, or rather absence of system, in disbursing mandals' pay would be out of the question. There is no reason why difficulty should be experienced in disbursing the pay under the rules now in force, nor will there be any excuse if arrears are allowed to accumulate again.

5. The remarks contained in the report on the work of the mandals, patwaris, and supervisor kanungos, which consist for the most part of an enumeration of the defects observed, are apt to convey an unfavourable impression. The defects, however, although they are serious enough, and call for constant vigilance on the part of supervising officers, are chiefly connected with points of detail, and the Chief Commissioner has no reason to doubt that the fundamental objects for which the Land Records agency is employed are being attained with fair success. In the Assam Valley districts the system of maintaining cadastral maps and land records has stood the test of time, in spite of difficulties arising from the shifting of cultivation, which are probably greater than have been encountered in any other province. A very unsatisfactory feature, however, is the lack of interest generally taken in the working of the system by Deputy Commissioners, whose example is naturally followed by subordinate land revenue officers. Among Deputy Commissioners in the Assam Valley, only Captain Gurdon in Kamrup and Mr. Nicholl in Sibsagar, and among Subdivisional Officers only Lieutenant Playfair at Mangaldai and Rai Madhab Chandra Bardalai, Bahadur, at Barpeta, can be said to have sufficiently inspected the work of their mandals. The attention of District Officers has been repeatedly drawn to the importance of this duty, and the Chief Commissioner regrets to notice that there has been so little improvement.

6. As a result of the deputation of Mr. Lees, I.C.S., in the cold weather of 1897-98, to investigate the causes of the decrease of the land revenue demand in the Nowgong district, and in accordance with the orders passed by the Chief Commissioner on his report, an important special enquiry was carried out by the department with a view to thoroughly overhauling the land records of the district, which had fallen into some confusion chiefly owing to the effects of the epidemic of *kalá-ázár*. This testing was effected by specially organised parties of supervisor kanungos and mandals under the Sub-Deputy Collector, and included a plane-table survey of every considerable block of occupied land in the area which has not been cadastrally surveyed. The operations have been very successful, resulting in the addition of Rs. 7,435 to the revenue demand of the district by the discovery of concealed cultivation, and by revision of classification. The Chief Commissioner is glad to commend the good work done in this connection by Babu Radha Mohan Das, Sub-Deputy Collector of Nowgong.

7. Satisfactory progress is being made in the introduction of the system of persistent enquiry into agricultural conditions and statistics and tabulation of the results in mauza books, as a basis for the next reassessment of the Assam Valley. This is perhaps the most interesting work on which the department is now engaged, constituting, as it does, a new departure in settlement procedure. The mauza book has been introduced throughout the districts of Sibsagar, Lakhimpur, and Darrang, where continuous statistics of cultivation, resignations, wholesale and retail prices, sales of land, sub-tenancy, and crop-cuttings are now being regularly entered in it. For a large number of villages special maps have been prepared, on which the direction of the flow of water in the rice-fields, and other particulars bearing on their capacity for assessment, are shown, and a rough preliminary classification of lands according to quality has been carried out. The special thanks of the Chief Commissioner are due to Mr. Basu, the Assistant to the Director, for the zeal and energy which he has displayed in introducing this new system, and instructing the subordinate land records staff, on whom its working depends. In connection with the introduction of the mauza book, a census of live stock was carried out towards the close of the year in the Assam Valley and in the Jaintia Parganas of Sylhet. The results of the census are not given in the report; it is presumed that they will appear in the provincial returns of agricultural statistics for the past year.

8. The report contains interesting information on the subject of agricultural experiments carried out during the year in different districts, extracts of which have been separately published in the *Assam Gazette*. Most of the crops harvested from the previous year's sowing on the newly-opened experimental farm at Upper Shillong, proved unsuccessful, owing to insufficient use of manure, the soil having

proved to be poorer than was anticipated. This mistake has now been corrected, and the potatoes planted in October 1898 and March 1899, which comprised four new varieties imported from England, as well as Nainital, Australian, and local seed, gave a satisfactory yield. The Sikkim paddy sown at the farm, which is greatly superior to the local varieties of rice, also promises well. The Chief Commissioner is glad to see that distributions of imported seed of potatoes and rice have been made to local cultivators. It has been shown that oats can be profitably grown as a fodder crop in these hills, though, as a grain crop, their success is still doubtful. A silo, which was filled with the wild grasses of the Khasi Hills, proved successful, the silage being eagerly eaten by cattle. The expenditure on the farm amounted to Rs. 2,600-11-11, and the receipts from a small dairy which has been opened in connection with it, to Rs. 315-6-11.

9. The Chief Commissioner's acknowledgments are due to Messrs. Henniker and Kershaw for their efficient management of the department during the year, and to Mr. Kershaw for his full and interesting report.

ORDERED, that a copy of this Resolution, with a copy of the Report, be forwarded to the Commissioner, Assam Valley Districts, for information, special attention being invited to paragraphs 2, 4, and 5 of the Resolution.

By order of the Chief Commissioner of Assam,

F. J. MONAHAN,

Secretary to the Chief Commissioner of Assam.

A. S. P. O. (Rev.) No. 172*a*—395—4-9-99.

ANNUAL REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR

1899-1900.

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BY

D. H. LEES, Esq., I.C.S.,

OFFICIATING DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.

SHILLONG:

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No. 2175.

FROM

D. H. LEES, Esq., I.C.S.,

Offg. Director, Department of Land Records and Agriculture, Assam,

TO

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 2nd July 1900.

SIR,

I HAVE the honour to submit the Seventeenth Annual Report, giving an account of the operations of this Department for the year ending the 31st March 1900.

I have the honour to be,

SIR,

Your most obedient Servant,

D. H. LEES,

Offg. Director, Department of Land Records and Agriculture, Assam.

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REFERENCES.

District.	No. and name of station.*	Rainfall for 1899-1900.
Cachar	1. Silchar	[illegible]
	2. Eathkhola	[illegible]
	3. Dibrugarh	[illegible]
	4. Jaringa Valley	[illegible]
	5. Nemaska	[illegible]
	6. Dewan	[illegible]
	7. Mosaikhal	[illegible]
	8. Hailakandi	[illegible]
	9. Badarpur	[illegible]
	10. Jaffirbund	[illegible]
	11. Kayali	[illegible]
	12. Hailong	[illegible]
	13. Mohur Bakhla	[illegible]
	14. Paulong	[illegible]
	15. Mulkong	[illegible]
	16. Mopa	[illegible]
Sylhet	17. Sylhet	[illegible]
	18. Lalakhal	[illegible]
	19. Karimganj	[illegible]
	20. Sultanchatta	[illegible]
	21. Adam Tila	[illegible]
	22. Baghmirai Sil	[illegible]
	23. Samantagh	[illegible]
	24. Mandir Bazar	[illegible]
	25. Lengla	[illegible]
	26. Halaiganj	[illegible]
	27. Chandpur	[illegible]
	28. Sunamganj	[illegible]
Goalpara	29. Dhubri	[illegible]
	30. Harmai	[illegible]
	31. Kachugaon	[illegible]
	32. Bijni	[illegible]
	33. Goalpara	[illegible]
	34. Dhaka	[illegible]
Kamrup	35. Gauhati	[illegible]
	36. Mandakola	[illegible]
	37. Kamarpur	[illegible]
	38. Rangiya	[illegible]
	39. Sangaria	[illegible]
	40. Tamkulpur	[illegible]
	41. Sipa	[illegible]
	42. Sarai	[illegible]
	43. Palasbari	[illegible]
	44. Barbaar	[illegible]
	45. Kalai	[illegible]
	46. Chhaygaon	[illegible]
	47. Baka	[illegible]
	48. Bamgaon	[illegible]
	49. Jaiyaka	[illegible]
	50. Bajali	[illegible]
Darrang	51. Tezpur	[illegible]
	52. Chandaur	[illegible]
	53. Dorai	[illegible]
	54. Sulpaon	[illegible]
	55. Sarupakhat	[illegible]
	56. Sahari	[illegible]
	57. Gohpur	[illegible]
	58. Nangalgiri	[illegible]
	59. Rupati	[illegible]
	60. Singrimari	[illegible]
	61. Kalina	[illegible]
	62. Attarakhat	[illegible]
	63. Gangajali	[illegible]
	64. Kerkeriya	[illegible]
	65. Mailan	[illegible]
Nowgong	66. Nowgong	[illegible]
	67. Kalani	[illegible]
	68. Sahari	[illegible]
	69. Kalaiya	[illegible]
	70. Bakhtiani	[illegible]
	71. Mailkhola	[illegible]
	72. Lanka	[illegible]
	73. Lumbing	[illegible]
Sibsagar	74. Sibsagar	[illegible]
	75. Sonari	[illegible]
	76. Amhari	[illegible]
	77. Mailim	[illegible]
	78. Angoti	[illegible]
	79. Jaihat	[illegible]
	80. Sibong	[illegible]
	81. Dafla Tila	[illegible]
	82. Gamgaon	[illegible]
	83. Nagaiong	[illegible]
	84. Dilla	[illegible]
	85. Dewagaon	[illegible]
	86. Dewangaon	[illegible]
	87. Kalian	[illegible]
	88. Dum Dhoma	[illegible]
	89. Rudya	[illegible]
	90. Mangkhola	[illegible]
	91. Jalpur	[illegible]
	92. Wilkina	[illegible]
	93. Mirna	[illegible]
	94. North Lakhimpur	[illegible]
	95. Pachalgaon	[illegible]
	96. Chakrathana	[illegible]
	97. Harmati	[illegible]
	98. Kalaiya	[illegible]
	99. Wakha	[illegible]
	100. Mahabhang	[illegible]
Naga Hills	101. Tamlu	[illegible]
	102. Bhiliang	[illegible]
	103. Upper Shiliang	[illegible]
	104. Lumpyaphit	[illegible]
	105. Mangkhong	[illegible]
	106. Chetta Pungi Police Station	[illegible]
	107. Jowai	[illegible]
Cent. Hills	108. Tura	[illegible]
Manipur	109. Manipur	[illegible]
	110. Ahai	[illegible]
	111. Sailong	[illegible]
	112. Chaltalan	[illegible]
Lushai Hills	113. Tawai	[illegible]
	114. Lunglei	[illegible]
	115. Dewangal	[illegible]

* ○ Indicates the position of the station.

MAP SHOWING THE POSITION OF RAINFALL-RECORDING STATIONS IN ASSAM AND THE RAINFALL AT EACH STATION DURING THE YEAR 1899-1900.

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ANNUAL REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR

1899-1900.

CHAPTER I.

PREFATORY.

Charge.

1. Mr. L. J. Kershaw, I.C.S., held charge of the Department from the 1st April 1899 until the afternoon of the 10th March 1900, when I assumed charge of the Department and remained in charge until the close of the year. Mr. Bhupal Chandra Basu, B.A., M.R.A.C., M.R.A.S. (Eng.), was Assistant to the Director, Department of Land Records and Agriculture, Assam, during the year, except for three months from the afternoon of the 18th May to the forenoon of the 19th August 1899, when he was on privilege leave, and Mr. Manmatha Nath Ghosh, M.A., B.L., Extra Assistant Commissioner, officiated for him.

Tours of the Director.

2. Mr. Kershaw was on tour for 117 days, and inspected the work of the Land Records staff of all the districts of the Assam Valley, except Darrang, and of the Jaintia parganas and Karimganj subdivision in Sylhet district. He twice inspected the work of the *ilam* settlement, and visited Silchar to discuss settlement questions with the Settlement Officer, Cachar.

I was on tour for 36 days, including 15 days after the close of the year, and inspected the work of the Land Records staff of Mangaldai subdivision, the *ilam* settlement work at Maulvi Bazar, and the final preparation of settlement papers at Silchar.

Tours of the Assistant to the Director.

3. Mr. Ghosh was on tour for 71 days during the rains, and inspected the progress of mauza-book work in all the subdivisions of Sibsagar and Lakhimpur, and Tezpur subdivision. During his tours of 131 days, Mr. Basu inspected mauza-book work in all the subdivisions of Sibsagar, Lakhimpur, and Darrang, and introduced the mauza-book in Kamrup. He also visited the experimental farm on 33 days.

CHAPTER II.

LAND RECORDS ESTABLISHMENTS.

Mandals and patwaris.

4. The following statement shows the number of mandals and patwaris entertained in the province on the 31st March 1900, their grading, and qualifications:

First grade.	Second grade.	Third grade.	Total.	Holding first-class certificates.	Holding second-class certificates.	Without certificates.	Total.
1	2	3	4	5	6	7	8
152	347	635	1,134	302	747	90	1,139*

* Including 5 mandals paid by the mauzadar of Beltola in the Kamrup district.

The sanctioned strength of mandals and patwaris and the number actually entertained remained the same as at the close of last year. The number of mandals in the second grade has very nearly reached the sanctioned scale of 30 per cent. of the total number. The number of mandals in the first grade is still far below the sanctioned strength, but is being increased every year by the promotion of deserving men. During the year, 21 mandals and patwaris were promoted to this grade. At the end of 1895 there were only 84 mandals in the first grade out of a total number of 1,004.

The number of uncertificated mandals and patwaris was still further reduced during the year. There are now only 90 mandals without certificates, of whom 11 are exempted from passing in surveying. Out of the remaining 79 unqualified mandals, 42 belong to Nowgong and 19 to Lakhimpur. Most of these men are probably employed in mauzas not cadastrally surveyed. There has been a considerable improvement of late years in the qualifications of mandals. In 1895 there were 205 mandals, or a fifth of the total number, without certificates. The increase in the number of mandals with first-class certificates is very noticeable. In 1895 there were only 140 such mandals, but now the number is 302.

The average size of a mandal's circle in the Assam Valley is 14,958 *bighas*, and of a patwari's circle in Jaintia and Cachar, 18,029 *bighas* and 20,644 *bighas*, respectively. The smaller average size of the circles in the Assam Valley is due to the very large area of fluctuating cultivation, which is small in Jaintia and almost *nil* in Cachar. During his inspection of the work of the Jaintia patwaris, Mr. Kershaw found that some of the patwaris had very little work to do, and suggested a reduction in the number of patwaris. Since the close of the year a reduction of 6 patwaris has been sanctioned. The question whether still further reduction is possible, will be considered later on. Owing to the abandonment of cultivation in the parts of Barpeta subdivision which have suffered severely from the floods which have yearly inundated the country since the earthquake, a radical redistribution of mandals' circles in Barpeta subdivision was found necessary.

Owing to the great accumulation of arrears of mandals' and patwaris' pay, the rules for its disbursement were revised. During the latter half of the year there was some improvement in the punctual drawal of pay, and in all districts except one February's pay was drawn in March.

Survey schools.

5. The following statement gives in detail the number of pupils passed in each of the three survey schools in the province during the year, and the average cost per pupil, and compares the figures with those of the preceding year:

Year.	Number of pupils who received first-class certificates.				Number of pupils who received second-class certificates.				Total passed.	Total cost of the school.	Total receipts.	Net cost.	Average net cost of each passed pupil.
	Mauzadars.	Mandals.	Candidates.	Total.	Mauzadars.	Mandals.	Candidates.	Total.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14
										Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1898-99 ... Gauhati ...	...	2	23	25	...	3	54	57	82	1,064 0 0	940 8 0	123 8 0	1 8 0
1898-99 ... Jorhat ...	...	2	...	2	...	3	24	27	29	466 1 0	408 5 0	57 12 0	1 15 10
1898-99 ... Dibrugarh ...	...	1	2	3	...	6	12	18	21	585 15 8	214 0 0	371 15 8	17 11 5
Total for 1898-99 ...	...	5	25	30	...	12	90	102	132	2,116 0 8	1,562 13 0	553 3 8	4 3 1
1899-1900 ... Gauhati ...	...	...	21	21	1	1	43	45	66	1,101 14 3	766 0 0	335 14 3	5 1 5
1899-1900 ... Jorhat ...	...	2	...	2	...	4	19	23	25	506 6 0	373 4 0	133 2 0	5 5 2
1899-1900 ... Dibrugarh ...	...	1	3	4	...	4	15	19	23	575 12 0	248 0 0	327 12 0	14 4 0
Total for 1899-1900 ...	...	3	24	27	1	9	77	87	114	2,184 0 3	1,387 4 0	796 12 3	6 15 10

The total number of pupils passed has fallen off from 132 to 114, and the net cost to Government per pupil has increased from Rs. 4-3-1 to Rs. 6-15-10. It is, however, satisfactory to find that the Dibrugarh school shows an increase in the number of pupils passed and a corresponding decrease in the average net cost per passed pupil, as compared with the preceding year.

The Gauhati, Jorhat, and Dibrugarh schools were inspected during the year by Mr. Kershaw, and were found to be well managed. The post of the second master of the Gauhati school has been abolished from the 1st April 1900.

Two examinations for first-class survey certificates were held by the Superintendent of Provincial Surveys at the Gauhati Survey School during the year, and one examination at each of the survey schools at Jorhat and Dibrugarh. Twenty-one pupils passed from the Gauhati school, two from the Jorhat school, and four from the Dibrugarh school.

Supervisor kanungos' touring and inspection.

6. There was no change in the number of supervisor kanungos, which remained as at the close of last year. There were 24 supervisor kanungos in the first grade and 32 in the second grade. The average size of a supervisor kanungo's circle is—

	Bighas.
Assam Valley	295,507
Sylhet	234,381
Cachar	250,310

The amount of touring performed by supervisor kanungos is still very insufficient in most districts. In Darrang district all the six supervisor kanungos were on tour for over 200 days. In Goalpara the supervisor kanungo was on tour for 214 days. In Nowgong 7 out of the 8 supervisor kanungos were on tour for over 200 days. In Kamrup, the prescribed amount of touring was performed in only half the number of circles, and in Sibsagar in only one out of 9 circles. The bad result in Sibsagar is due to the Sub-Deputy Collectors exercising no control over their subordinates. In the Patidarrang circle in Kamrup, the three supervisor kanungos in charge were on tour for only 104 days; and in the western circle of Sibsagar sadr, the supervisor kanungo was on tour for only 131 days. The attention of the Deputy Commissioners, Kamrup and Sibsagar, has been called to the insufficient touring done by the supervisor kanungos, whose explanations were unsatisfactory. In Lakhimpur two of the three supervisor kanungos were on tour for over 200 days. In Cachar the supervisor kanungos were engaged in settlement work. The touring done by the supervisor kanungos of Jaintia was insufficient.

The Government surveyors at Gauhati and Dibrugarh were on tour for only 101 and 111 days, respectively. The services of these officers do not seem to be fully utilised.

The total length of check-lines run by supervisor kanungos during the year was 1,716·31 linear miles, or 9·77 linear miles per square mile of fluctuating cultivation. The prescribed minimum of 4 linear miles per square mile of fluctuating cultivation was attained in all the circles of the Assam Valley districts, except the Nalbari circle in Kamrup and the Eastern circle of Sibsagar sadr. In the Nalbari circle the cultivation is almost entirely permanent, and it is difficult to find suitable places for running check-lines. The testing of survey without check-lines is probably more useful there. The insufficient testing in the Eastern circle of Sibsagar sadr was due to the ill-health of the supervisor kanungo. At his inspection Mr. Kershaw found that the supervisor kanungo had failed to test large areas of new cultivation in five mandals' circles. The testing work of the supervisor kanungos was generally satisfactory. The chief faults noticed by Mr. Kershaw at his inspections were the neglect to test the survey of blocks of new cultivation, the running of check-lines in unsuitable places in order to show good returns, and the failure of the supervisor kanungos to correct mandals' survey when found inaccurate. These faults were worst in the Rangiya, Tambulpur, and Bajali circles of Kamrup, and in the Roha, Silghat, and Ghugua circles in Nowgong.

Touring and inspection by Sub-Deputy Collectors.

7. The prescribed amount of touring was done in all the subdivisions, except Silchar, Hailakandi, Dhubri, and Dibrugarh. The touring done by the Sub-Deputy Collectors of Mangaldai and Tezpur subdivisions and Bijni tahsil only just exceeded 150 days. The Sub-Deputy Collectors in Cachar were employed in the final preparation of the settlement

papers, and, with the exception of Babu Krishna Kumar De, were unable to spend much time on tour. There was no Sub-Deputy Collector in Dhubri for nearly half the year. The insufficiency of the touring in Dibrugarh was due to the laxity of the Sub-Deputy Collectors Babus Hem Chandra Gosvami and Gopal Chandra Puri Bhuiyan, who were on tour for only 7 and 20 days out of 54 and 160 days, respectively, during which they were in charge.

Babus Radha Mohan Das and Harendra Kumar Ghosh, of Nowgong district, Babu Rajani Kanta Bardalai, of Barpeta, Babu Jajnesvar Das Gupta, of Mangaldai, and Maulvi Abrar Hussain, of North Lakhimpur, worked well during the year. Babu Mahendra Chandra De, of Tezpur, neglected the testing of mandals' field-work and the examination of mandals' papers. Babu Hem Chandra Gosvami did insufficient work while at Dibrugarh. The three Sub-Deputy Collectors of Sibsagar district, Babus Benudhar Rajkhowa, Sarat Chandra Lahiri, and Laksheswar Sarma, failed to exercise intelligent supervision over the work of the supervisor kanungos and mandals, which was found by Mr. Kershaw to be far from satisfactory. Considerable areas of concealed cultivation were discovered by Babus Benudhar Rajkhowa, Gopal Chandra Puri Bhuiyan, Rajani Kanta Bardalai, and Harendra Kumar Ghosh.

Survey qualifications of tahsildars and mauzadars.

8. Babu Gunahas Gosvami, tahsildar of Roha, in the district of Nowgong, passed an examination in practical surveying held by the Superintendent of Provincial Surveys. All the tahsildars in the province have now passed in practical surveying except one, who is exempted.

Of the 119 mauzadars in the Assam Valley, 25 possess first-class and 35 second-class certificates. The number of qualified mauzadars, though still only half the total number, is yearly increasing. In 1895 there were 50 mauzadars qualified in surveying.

Inspection and testing by tahsildars and mauzadars.

9. A fair amount of inspection of mauzadars' papers and testing of field-work was done by tahsildars (who are not Sub-Deputy Collectors) and mauzadars. Among tahsildars, Babu Chiniram Das in Kamrup made absolutely no inspection of mandals' work. Babu Santiram Hazarika, tahsildar of Nowgong sadr, did not examine the papers of a single mandal, and did an insignificant amount of testing of field-work, and Babu Chandra Kanta Barua, tahsildar of Samaguri, Nowgong, inspected the papers of only two mandals, and also did practically no testing of field-work. As tahsildars are engaged in the collection of revenue during the cold weather and beginning of the hot weather, it is impossible to require them to devote much time to running check-lines, but it is absolutely necessary that they should exercise strict supervision over the work of mandals, and should examine the papers of every mandal in their tahsils. Only in Darrang district did the tahsildars examine the papers of all the mandals in their tahsils.

There is room for considerable improvement in the amount of inspection done by mauzadars in the Darrang district, where 5 out of 12 mauzadars failed to examine the papers of any mandals. The mauzadars of Kamrup, Sibsagar, and Lakhimpur checked the mandals' papers to a considerable extent.

Inspection of Land Records staff by Deputy Commissioners and Subdivisional Officers.

10. With the exception of the Deputy Commissioners, Sylhet, Sibsagar, and Goalpara, and the Subdivisional Officer, North Lakhimpur, all the Deputy Commissioners and Subdivisional Officers inspected the work of the Land Records staff under them. The Deputy Commissioners, Kamrup, Darrang, and Nowgong, and the Subdivisional Officer, Mangaldai, paid special attention to this important work. The amount of testing by check-lines was very small. It is only in remote places that the running of check-lines is likely to be of much use. I think that the attention of Deputy Commissioners and Subdivisional Officers should rather be directed to the inspection of the testing work done by the supervisor kanungos, with the view of seeing that check-lines are always run by them in suitable places. By comparing the traces of supervisor kanungos' check-lines with the maps, it is easy to ascertain whether mistakes in survey discovered by the supervisor kanungos are corrected.

Details of the inspection work done by Deputy Commissioners and Subdivisional Officers are given in Appendix C. The inspection work done by supervisor kanungos, Sub-Deputy Collectors, tahsildars, and mauzadars is shown in Appendices A, B, D, E, F, and G.

Inspection by Superintendent of Provincial Surveys.

11. Mr. O'Donel, Superintendent of Provincial Surveys, was on tour for 261 days, and inspected the work of the supervisor kanungos and mandals of all the subdivisions of the Assam Valley, except Barpeta, Mangaldai, and Tezpur. He also held four first-class survey school examinations, at Gauhati, Jorhat, and Dibrugarh.

Results of inspection by the Director of Land Records and Agriculture.

12. Mr. Kershaw was disappointed with the work of the mandals in the sadr subdivision of Kamrup, who did not do sufficient work, and were late in the submission of their crop statements. There was a distinct improvement in the efficiency of the Land Records staff of Nowgong district, but there was still room for improvement in the preparation of the *fautferar* lists, which were found to be loosely prepared by the mandals. Mr. Kershaw was unable to record any appreciable increase of efficiency in the work of the supervisor kanungos and mandals of Sibsagar district. This failure he attributed to the want of supervision exercised by the Sub-Deputy Collectors. The work of the Land Records staff of Sylhet, Goalpara, Darrang, and Lakhimpur was found to be satisfactory.

Maintenance of record of rights up to date.

13. The important work of recording changes in the *jamabandi* devolves on the registrar kanungos. The correction of the copies of *jamabandi* kept at district and subdivisional headquarters was found by Mr. Kershaw to have been satisfactorily done, but owing to the neglect of the registrar kanungos to attend to the return of *parwanas* issued to tahsildars and mauzadars for the correction of their copies of *jamabandi* and also of the *dagchitha*, it is doubtful whether the mufassil copies of the *jamabandi* and *dagchitha* have been properly corrected. Only in Sylhet and Barpeta was effective supervision exercised over the carrying out of corrections by tahsildars and mauzadars. At his inspection of the Gauhati registrar kanungo's office in May 1899, Mr. Kershaw found such irregularities that he considered the accuracy of the record of rights seriously endangered in this district, where it is specially important. The registrar kanungo was subsequently removed. In Sibsagar district, there was a very large number of cases in which *parwanas* issued to tahsildars and mauzadars for recording changes had not been returned, some of the cases in Golaghat subdivision being nearly two years old. In the Assam Valley districts, where raiyats are generally very remiss in applying for registration of their names in the *jamabandi*, the importance of the submission by the mandals of lists of persons who have come into possession of land and have not applied for registration of their names cannot be overrated. There is good reason to believe that these lists are often incomplete. The attention of supervisor kanungos and Sub-Deputy Collectors should be specially directed to this.

Condition of survey marks.

14. The condition of survey marks is bad in Barpeta subdivision, where the number in disrepair and number lost were high. In Mangaldai I found that the survey marks situated in jungle had not been visited by the mandals. The inspection of survey marks by the Sub-Deputy Collectors has been quite insufficient everywhere, except in Nowgong district and Mangaldai and Karimganj subdivisions. The repairing of theodolite stations situated in the sparsely-populated jungly tracts, where the cultivation is fluctuating, is a matter of difficulty, but is absolutely necessary to enable the mandals to survey properly. There can be no doubt that a large number of theodolite stations in jungle blocks have been lost. The following statement is an abstract of Appendix H :

Classification.	Total number (columns 6+7+8.)	Total number found in good order by mandals and patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5 or total in good order on 30th June 1899.	Number lost or left unvisited.
			Repaired.	Not repaired.		
1	2	3	4	5	6	7
(*a*) Trijunction prisms...	12,577	11,783	346	128	12,129	320
(*b*) Traverse stations shown by mounds and *simul* boughs	83,422	44,070	23,504	8,918	67,574	6,930
(*c*) Kanungos' mounds, including jungle mounds ...	9,202	4,314	2,931	1,218	7,245	739
(*d*) Prisms on boundaries of grants, etc.	10,514	9,789	18	312	9,807	395
(*e*) Concrete blocks ditto	16,261	15,355	59	433	15,414	414
(*f*) Country stones ditto	10,232	9,308	197	156	9,505	571
(*g*) Mounds ditto	4,729	3,812	252	608	4,064	57
(*h*) Brick pillars	73	73	...	...	73	...
(*i*) Concrete blocks of town theodolite stations ...	14	14	...	...	14	...
Grand total	147,024	98,518	27,307	11,773	125,825	9,426

Advances and recoveries on account of demarcation.

15. The statement in Appendix I shows the advances and recoveries made up to the 31st March 1900, and the balances outstanding on that date on account of demarcation in connection with cadastral survey operations in each district. These advances have been grouped under the same heads as in the reports of previous years.

The year opened with outstandings amounting to Rs. 1,58,576-8-1, which increased to Rs. 1,66,472-14-5 by the addition of Rs. 7,896-6-4 advanced during the year. The recoveries made amounted to Rs. 38,686-7-10, leaving at the end of the year an outstanding balance of Rs. 1,27,786-6-7.

Leaving out of consideration Cachar and the *ilam* estates, and Langai-Singla disforested tracts in Sylhet, where no steps can be taken for the systematic recovery of the advances until settlement operations have been concluded, satisfactory progress has been made in the recovery of the advances. In the other districts the outstandings at the beginning of the year were Rs. 65,139-0-7, which rose to Rs. 65,703-11-5 by new advances amounting to Rs. 564-10-10. Of this, Rs. 34,522-9-9 was recovered, Rs. 3,919-3 was, with the sanction of the Hon'ble the Chief Commissioner, written off as irrecoverable, and Rs. 27,261-14-8 remained outstanding at the close of the year.

The sum of Rs. 3,919-3-0 written off represents the advances made for the demarcation of the areas surveyed by local agency in the Bijni and Sidli Duars of the Goalpara district, where the entire area surveyed consists of fluctuating cultivation only.

The largest amount (Rs. 17,333-6-9) was recovered in Sibsagar, Kamrup (Rs. 7,399-9-3), Darrang (Rs. 4,693-10-4), Sylhet (Rs. 2,945-2-4), and Nowgong (Rs. 1,458-10-11) coming next in order.

CHAPTER III.

UTILISATION OF LAND RECORDS.

The mauza-book.

16. At the close of 1898-99, the mauza-book had been introduced in the districts of Sibsagar, Lakhimpur, and Darrang. During 1899-1900, it was introduced in the sadr subdivision of Kamrup, and since the close of the year it has also been introduced in the Barpeta subdivision. Nowgong is the only district of Assam Proper where the mauza-book remains to be introduced.

The following statement shows the number of mauzas and villages, and the area for which the mauza-book is now being maintained :

Subdivision.	Number of mauzas.	Number of villages.	Area, in *bighas*.
Sibsagar sadr	19	625	1,283,334
Jorhat	20	577	1,155,711
Golaghat	14	345	737,990
Dibrugarh	14	222	354,945
North Lakhimpur ...	8	112	160,258
Tezpur	10	263	482,076
Mangaldai	40	901	1,376,974
Gauhati	52	1,352	2,742,687
Total	177	4,397	8,293,975 = 4,284·08 square miles.

The village and mauza statements of the mauza-book have been practically written up to date in every subdivision where it had been introduced before the close of the year. No difficulty is experienced in compiling those statements for which materials are obtainable from the settlement records. The preparation of the

statement of coercive processes is found to be attended with some difficulty, and is, therefore, backward in some mauzas. The manner in which the wholesale prices of agricultural produce were being recorded did not appear to Mr. Basu to be satisfactory. Steps have been taken to remove the defect, though, considering the nature of the work, Mr. Basu does not hope for much improvement in the accuracy of the record.

The following statement exhibits the number of sub-tenants entered in the sub-tenancy registers in each subdivision, and the extent to which the entries have been tested by the Sub-Deputy Collectors and supervisor kanungos :

Subdivision.	Total number of entries.	Number of entries tested by	
		Sub-Deputy Collectors.	Supervisor kanungos.
Sibsagar sadr	2,390	249	234
Jorhat	4,565	712	1,769
Golaghat	1,804	216	...
Dibrugarh	1,647	93	807
North Lakhimpur	1,709	36	360
Tezpur	1,568	7	402
Mangaldai	17,671	382	1,794
Gauhati	179,720	1,859	8,490
Total	211,074	3,554	13,856

The rules require the Sub-Deputy Collectors to test up to 10 per cent. and the supervisor kanungos up to 30 per cent. of the total number of entries. The number of entries tested by the Sub-Deputy Collectors did not reach the prescribed percentage in any subdivision except Sibsagar, Jorhat, and Golaghat. The outturn of testing by the supervisor kanungos also fell short of the required percentage except in the Dibrugarh circle.

Babu Bhola Nath Das, Sub-Deputy Collector in charge of Gauhati tahsil, did not test a single entry. He reports that his collection work left him no time for testing sub-tenancy entries—an excuse which all Sub-Deputy Collectors in charge of tahsils can equally plead. The supervisor kanungos of Golaghat appear to have done no testing at all.

The rules relating to the classification of *rupit* lands were revised during the year. The revised rules rendered it necessary for the mandals to revise the classification and to write notes thereon. The progress of the classification work and the marking of water-flow up to the close of the year is shown below :

Subdivision.	Number of villages classified.	Number of villages on which classification notes have been written.	Number of villages of which classification has been tested by Sub-Deputy Collectors.	Number of villages in which water-flow has been marked.
Sibsagar sadr ...	527	12	194	501
Jorhat ...	405	66	129	405
Golaghat ...	237	80	134	237
Dibrugarh ...	154	154	49	205
North Lakhimpur ..	94	32	17	58
Tezpur ...	263	33	6	263
Mangaldai ...	589	576	73	780
Gauhati ...	101	87	8	...
Total ...	2,370	1,040	610	2,449

The mauza-book having been introduced in the Gauhati subdivision late in the year, sufficient progress could not be made in the classification work before the 31st March.

I have no reason to differ from the favourable remarks made by Mr. Kershaw in last year's Annual Report on the satisfactory progress of the classification work, which is being intelligently carried out by the mandals, but the progress made by the Sub-Deputy Collectors in testing the classification does not appear to be everywhere satisfactory. In this respect the work is backward in Tezpur, Mangaldai, North Lakhimpur, and Dibrugarh. Babu Sarat Chandra Lahiri, Sub-Deputy Collector, Golaghat, showed a praiseworthy energy by testing the classification of no fewer than 82 villages during the year.

The work of marking the direction of water-flow has also made good progress, but, on inspection, Mr. Basu generally found that it was not so accurately and thoroughly done as it should be. The proper performance of this work requires an amount of patience and care which is not to be ordinarily expected from the mandal.

The number of villages the economic condition of which has been examined and noted on by the Sub-Deputy Collectors is shown below :

Subdivision.	Number of villages examined.
Sibsagar sadr	33
Jorhat	23
Golaghat	85
Dibrugarh	43
North Lakhimpur...	3
Tezpur	4
Mangaldai	36
Gauhati	...
Total	227

A sufficient number of villages appears to have been examined in every subdivision except Tezpur and Gauhati. The progress was specially satisfactory in Golaghat. The Sub-Deputy Collector of Tezpur, Babu Mohendra Chandra De, appears to have given little attention to this work, as well as to the more important work of testing the classification of *rupit* lands.

Below is shown the number of crop experiments made last year under the mauza-book rules in each subdivision, as compared with the number carried out in 1898-99 :

Subdivision.	Number of crop experiments.	
	1898-99.	1899-1900.
Sibsagar sadr	95	156
Jorhat	246	170
Golaghat	134	150
Dibrugarh	121	43
North Lakhimpur	[17]	53
Tezpur	38	85
Mangaldai	134	159
Gauhati	[17]	580

No experiments were made in 1898-99 in North Lakhimpur and Gauhati under the mauza-book rules. The experiments shown in brackets under 1898-99 were made by Sub-Deputy Collectors, tahsildars, mauzadars, and other superior officers. The number of experiments made last year shows a great advance on that of the previous year in every subdivision, except Jorhat and Dibrugarh. Very few experiments were made last year in Dibrugarh owing to a misunderstanding, for which the Sub-Deputy Collectors in charge, Babu Gopal Chandra Puri Bhuiyan and Babu Ram Kumar Aditya, are responsible. The majority of the experiments were carried out by supervisor kanungos and mandals. The manner in which the crop-cuttings were made was not

altogether free from fault. Many of the experiments in *sali dhan* were made without any regard to the class of land, and there is a general tendency among experimenting officers to postpone cuttings till late in the season, when the selection of a suitable field, which should represent an average crop for the season, becomes a matter of extreme difficulty.

The initiation of special experiments with the object of obtaining an accurate knowledge of the average outturn of the various crops grown, the methods of agriculture practised, the prices obtained for produce, the cost of cultivation and living, and the net profits of agriculture, has been postponed in view of the approaching census operations, which are expected to take up a great deal of the time of the Sub-Deputy Collectors during the current year.

Special enquiries.

17. In accordance with the orders in the Chief Commissioner's Resolution No. 5229—30R., dated the 8th November 1898, three special enquiries were held during the cold weather in the sadr and Barpeta subdivisions of Kamrup district and in the Mangaldai subdivision of Darrang district. The enquiry made by Sub-Deputy Collector Babu Hem Chandra Gosvami under the orders of the Deputy Commissioner in mauzas Ramdia, Uttar Barkhetri, and Dakshin Barkhetri in the Hajo tahsil of Kamrup sadr resulted in the discovery of an area of 378 *bighas* unassessed and 160 *bighas* under-classified. The enquiry in the Barpeta subdivision was held in mauzas Bijni and Hastinapur by the Sub-Deputy Collector Babu Rajani Kanta Bardalai with two supervisor kanungos and 16 mandals. The land revenue of Bijni and Hastinapur mauzas has increased greatly since 1897-98, owing to migration thither of raiyats from the tracts damaged by the earthquake and subsequent floods. The special enquiry seems to have been held in these mauzas with the object of ascertaining if all occupied lands had been assessed. In the cadastrally-surveyed area only 19 *bighas* were found unassessed and no cases of under-classification were discovered. In the non-cadastral area out of 11,235 *bighas*, 123 *bighas* were found unassessed and 595 *bighas* under-classified. Many cases of under-measurement of land were found, but were more than counterbalanced by more numerous cases of over-measurement. Under the rough system of measurement of land practised in the non-cadastral tracts such discrepancies can hardly be avoided.

The special enquiry in Mangaldai subdivision was held by Sub-Deputy Collector Babu Jajnesvar Das Gupta in mauzas Dahi, Banglagarh, Harisinga, and Ambagaon with two supervisor kanungos and 12 experienced mandals. These mauzas were selected owing to the decrease of the land revenue on account of relinquishments and *fautferar* exclusions, and one of the main objects of the enquiry was to ascertain whether any of the land excluded from settlement was actually in any one's possession. Out of a total area of 42,557 *bighas*, only 141 *bighas* were found unassessed and 179 *bighas* under-classified. The unassessed land consisted entirely of extensions on the edge of old cultivation. The decrease of land revenue in these mauzas is mainly due to the prevalence of *kalá-ázár*, and cannot be attributed to defects of the survey and settlement system.

During his tour in Nowgong district, Mr. Kershaw found that numerous objections had been raised by the raiyats to the assessment of land returned as unassessed by the mandals engaged in making the special enquiry in 1898-99, and that the area of concealed cultivation had been substantially reduced in every circle on revision. The raising of classification was, on the whole, correct, although reductions had to be made from the area originally returned in three circles. It is clear that some of the supervisor kanungos and mandals carried out their work in a very reckless way. There is some danger of these special enquiries being regarded as made with the object of increasing the land revenue. The Sub-Deputy Collector of Mangaldai says that some mandals in their anxiety to show an increase of revenue raised classification of land unnecessarily, and assessed a whole *dag* when only a small fraction was occupied. The sub-Deputy Collector put a stop to these practices. It is necessary to impress on supervisor kanungos and mandals engaged in these enquiries that they are made with the object of disclosing defects in the survey and settlement system, and not of raising the revenue.

During the past three years special enquiries have been held in all the districts and subdivisions of the Assam Valley where the land revenue has decreased in the last few years. These enquiries, while disclosing some defects in the working of the Land Records staff, have shown that these defects account for a very small fraction of the decrease of revenue. The enquiries held during the past year have resulted in the discovery of far fewer defects than were found at the previous enquiries, which probably had the effect of stimulating mandals to pay a closer attention to their work.

CHAPTER IV.

SCIENTIFIC AND NATIONAL ENQUIRY UNDER IMPERIAL CONTROL.

Meteorology.

18. In accordance with the orders conveyed in letter No. 965Misc.—781R., dated the 11th March 1897, a separate report on the registration of rainfall has been submitted to the Secretary to the Chief Commissioner. A map illustrative of the fall of rain in each of the 115 registering stations is annexed to this report.

Economic products, Index Collections.

19. At the instance of the Reporter on Economic Products to the Government of India, specimens of the following articles for the index collections of the Imperial Institute and Indian Museum were forwarded to him:

Acampe papillosa	...	...	The specimen sent last year proved to be a lily: further specimens sent.
Acorus calamus	...	...	Further quantity of leaves and root-stock and botanical specimen.
Aleurites moluccana	...	...	Nuts, fruits, and roots.
Alocasia indica	...	...	Root-stock.
Alocasia macrorrhiza	...	...	Corms and botanical specimen.
Amarantus gangeticus	...	...	Plants and seeds.
Amarantus spinosus	...	...	Ditto.
Artemisia vulgaris	...	...	Leaves, shoots, flowers, roots, ink from roots, necklaces and botanical specimens.
Artocarpus chaplasha	...	...	Timber.
Asparagus racemosus	...	...	Roots and botanical specimen.
Bambusa nutans	...	...	Stems.
Bambusa pallida	...	...	Stems.
Basella alba	...	...	Leaves, stems, and botanical specimen.
Basella rubra	...	...	Leaves, stems, and botanical specimen.
Clay ...	...	...	Edible and medicinal.
Cæsalpinia digyna	...	...	Root and seeds.
Manihot utilissima	...	...	A further supply of Tapioca and Cassava which were once supplied in 1897-98.
Maoutia puya ...	...	...	Leaves and fruits.
Perilla ocimoides	...	...	Seeds and oil.
Villebrunea integrifolia	...	...	Leaves, fruits, and fibres.

Steps have also been taken to procure, for the same purpose, specimens of the following plants:

Laportia crenulata.	*Aporosa roxburghii.*
Altingia excelsa.	*Elæocarpus Ganitrus.*
Aglaia edulis.	*Barleria cristata.*
Alpinea nutans.	*Bauhinia variegata*
Naravellia zeylanica.	*Bauhinia macrostachya.*
Amomum aromaticum.	*Allium tuberosum.*

Commercial collections.

The Reporter on Economic Products was supplied during the year with a maund of the pods of *Cæsalpinia digyna* (the *Teri* plant of Sylhet) in addition to the quantity (22 pounds) supplied to him in 1898-99. A requisition was received from the Reporter for a maund of the seed of *Embelia ribes* (*Bebrang* of Sylhet), and 20 pounds of the seed of *Gynocardia odorata* (ver. *Chaul mugra*, Bengali). He was supplied with half the quantity of the former, which only could be procured by the Deputy Commissioner

of Sylhet. Steps have been taken to procure the latter. The assistance of this office was also sought for obtaining information as to persons in this province who can export seeds of *Elæocarpus Ganitrus* (*Rudraksha*, Bengali) to a correspondent of the Reporter in Bombay, who was organising a trade in preparing buttons from ornamental seeds. The Deputy Commissioners of the plains districts who were consulted in this matter say that seeds are not procurable in any districts in large quantities.

The following dye-producing trees and plants mentioned in the "Monograph on Dyes and Dyeing in Assam," but not scientifically identified at the time of its issue, were identified during the year in addition to those enumerated in the previous reports :

Scientific names.	Vernacular names.
Symplocos spicata	*Khangpat.*
Indigofera tinctoria	*Rangapat.*
Strobilanthes flaccidifolius	*Lutarang.*

The following products named against each were forwarded to the Reporter on Economic Products to the Government of India at his special request :

Sapindus Mukorossi (ver. *Rita*) ...	Seeds and a botanical specimen.
Dioscorea (yams)	Tubers and botanical specimens.
Schima wallichii	Bark.

Attempts were also made to obtain seeds of *Camellia drupifera*, Lour., and of *Coptis Teeta* and a botanical specimen of a plant known as *kuthu* in the Naga Hills. The latter could not be procured.

In the course of complying with the requisitions of the Reporter on Economic Products, the existence of the following plants in this province was discovered during the year under report :

Amomum subulatum.	*Clematis nutans, Royle.*
Albizzia lebleck.	*Cephalenthus occidentalis.*
Æridès multiflorum.	*Canarium strictum.*
Bridelia tomentosa.	*Limnanthemum nymphæoides.*
Barleria prionitis.	*Millettia pachycarpa.*

The following plants were identified in connection with the revision of the list of field crops grown in Assam :

Prunus nepalensis	Khasi, U Soh-iong.
Brassica napus, var. dichotoma ...	The oil-bearing mustard of Sylhet.
Raphanus sativus, Linn.	The oil-bearing radish of Sylhet.

A large number of specimens of plants cultivated in this province are now with the Reporter, to whom they were sent for identification.

The Subdivisional Officer of Jowai in the Khasi and Jaintia Hills district sent to the Reporter on Economic Products specimens of a tree, from which a natural varnish, locally known as *Syndai* varnish, is obtained. It has been identified as *Myristica gibbosa*. The Political Agent in Manipur and Superintendent of the State sent to the Reporter on Economic Products botanical specimens of a fruit-tree locally called *Hainojom*. It has been identified as *Averrhoa carambola*. The *Gandhamatri* plant, of which specimens were supplied to the Reporter on Economic Products by this Department last year, has been scientifically determined as *Homalonema aromatica*, Schott.

The enquiry about *Chakamara* fibre made no progress during the year. The Deputy Commissioner, Nowgong, who was asked to supply one maund of the fibre, was unable to comply with the requisition.

In response to a call from the Agricultural Chemist to the Government of India for samples of representative food-grains and fodders of this province for the purpose of chemical analysis, samples of four kinds of millets, and nine varieties of paddy, and cleaned rice ordinarily grown in the Assam Valley, and of six kinds of pulses grown in the Khasi Hills, were collected during the year and sent to him. The results of his analysis have not yet been received.

20. The statement below shows the number of deaths among cattle reported from the several districts of the province during the past two years, and the causes to which they are attributed :

Veterinary science.

District.	2		3		4		5		6		7		8		9		10	
	Rinderpest.		Foot-and-mouth disease.		Swelling of mouth and throat.		Diarrhœa, dysentery, and cholera.		Anthrax.		Catarrh.		Other diseases.		Total.		Estimated value of cattle.	
	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.	18.8-99.	1899-1900.	1898-99.	1899-1900.	1898-99.	1899-1900.
																	Rs.	Rs.
Cachar	21	95	184	138	356	556	1,594	469	7	...	...	21	49	193	2,211	1,472	41,009	16,253
Sylhet	5,753	3,550	2,434	3,611	11,110	5,946	8,024	4,375	41	86	926	1,110	12,031	12,720	40,319	31,398	5 18,218	2,87,468
Goalpara	760	1,366	3,238	3,437	1,206	1,616	1,216	768	329	267	1,008	642	12,947	6,301	20,704	14,397	89,110	84,835
Kamrup	4,558	1,569	10,059	8,684	5,863	8,260	9,288	9,226	...	239	...	...	8,902	10,627	38,670	38,605	2,93,768	2,92,019
Darrang	875	1,249	782	2,521	246	706	664	2,346	101	46	22	137	2,489	5,089	5,179	12,094	35,644	1,07,524
Nowgong	487	589	3,658	4,146	1,273	2,212	670	4,633	...	...	...	...	2,059	1,873	8,147	13,453	65,176	1,07,624
Sibsagar	5,350	1,051	1,380	2,212	1,747	1,612	9,055	3,914	181	259	75	284	4,299	7,631	22,087	16,963	2,46,820	1,50,286
Lakhimpur	4,961	...	128	396	...	74	461	164	3	...	...	...	2,517	802	8,070	1,436	80,700	14,360
Naga Hills* ...	...	...	...	...	...	...	1,200	...	...	...	...	...	...	...	1,200	...	18,000	...
Khasi and Jaintia Hills...	...	...	...	147	...	26	83	900	...	...	...	...	...	45	83	1,118	1,148	11,606
Garo Hills* ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	22,765	9,469	21,863	25,292	21,801	21,008	32,255	26,795	662	897	2,031	2,194	45,293	45,281	146,670	130,936	11,89,593	10,71,975

* Information not available.

There was a decrease in the number of deaths during the year, as compared with the previous year, in all districts except Darrang, Nowgong, and Khasi and Jaintia Hills. The increase in the Khasi and Jaintia Hills was due to statistics being collected for a larger area. The floods in Nowgong district caused much sickness among cattle owing to the want of pasturage. The decrease in number of deaths is most noticeable in Lakhimpur.

A Veterinary Surgeon, Mr. H. A. Stuart, was employed under the Dibrugarh Local Board from the 21st July 1899 to the 31st March 1900. He visited 15 villages, and treated about 1,000 cattle suffering from foot-and-mouth disease, all of which were cured. His services are reported by the Deputy Commissioner to have proved most useful.

Statistics. Agricultural and fiscal statistics.

21. These returns were compiled, as usual, in this Department, and submitted in Return XLIB on the 1st September 1899. The estimates of the areas under different crops in the permanently-settled tracts of the province, for the purposes of Table A-3 of the Return, were for the first time utilised in the return submitted last year.

Trade statistics.

22. The quarterly and annual reports on the rail and river-borne trade of the province were issued as usual, and a note on foreign trade was drawn up for incorporation in the Annual General Administration Report. This, moreover, was the year for the issue of the Triennial Foreign Trade Report of the province.

The number of River Traffic Registration offices remained the same as in the preceding year, *viz.*, Dhubri, Bhairab Bazar, and Maulvi Bazar (Noakhali). The Traffic Registration office at Dhubri was inspected by me after the close of the year.

Mineral statistics.

23. The return of mineral statistics was, as usual, prepared in this Department from information received from District Officers, and submitted on the 30th March 1900.

Experimental crop-cuttings.

24. A note on the results of experimental crop-cuttings carried out during the year is under preparation, and will be submitted separately.

Returns of prices-current and wages.

25. As usual, the following returns were compiled by this Department:

Weekly return of retail prices-current of food-grains and salt for submission to the Government of India in the Department of Finance and Commerce.

Fortnightly return of retail prices-current for submission to the Director General of Statistics.

Half-yearly return showing the average wages of agricultural labourers, etc., for submission to the Government of India in the Department of Finance and Commerce.

CHAPTER V.

SCIENTIFIC AND LOCAL ENQUIRY UNDER PROVINCIAL DIRECTION.

Experimental Farm.

26. One of the objects of the Experimental Farm at Upper Shillong is to cultivate improved varieties of potatoes and rice grown by the Khasis. The results of the cultivation of potatoes during 1899-1900 were stated in last year's report. The best results were obtained from Nainital seed, which gave an outturn of over nine-fold. During March 1900, over 2 acres were planted with the following varieties:

Nainital.	Flour Ball.
Magnum Bonum.	Triumph.
Abundance.	Harbinger.
Windsor Castle.	Early Regent.

The crop was gathered during the first fortnight of July, and gave a yield of 316 maunds, or more than fourteen times the quantity of seed used. An area of 37 poles was planted with English seed imported in 1898 and 1900, and the remaining area with Nainital seed imported in 1896 and 1898. The only newly-imported English variety which gave a satisfactory outturn was "Abundance," which gave a return of twenty

times the seed and promises to do well in the Khasi Hills, as it is a hardy variety, which withstands stormy wet weather well. Imported seed does not generally yield well in the first year. The English varieties imported in 1898 gave a good yield. The Nainital seed imported in 1896 gave a less yield than the seed imported in 1898. The average outturn was 158 maunds of potatoes per acre. This is very much higher than the average outturn in the Khasi and Jaintia Hills, which is estimated to be only 45 maunds per acre for the first sowing and 18 maunds for the second sowing.

The large outturn is entirely due to the use of oilcake. The whole area planted was dressed with about 800 baskets of farmyard manure, but five plots were left without oilcake. The average yield of these five plots was equivalent to a yield of 65¾ maunds per acre, or less than half the yield of five adjoining plots which received oilcake and gave an outturn equivalent to 147 maunds per acre. The quantity of oilcake used was 20 maunds to the acre costing about Rs. 60. The increased yield per acre due to the use of oilcake was 81 maunds worth Rs. 100 at the lowest computation. It is clear, therefore, that the use of oilcake for potato cultivation on the poor soil round Shillong is very profitable.

The season was favourable to the potato crop until the second week of June, when stormy wet weather prevailed, and probably induced the potato rot which spoiled the greater part of the Nainital variety for seed purposes. The Nainital seed imported in 1896 gave a much larger percentage of diseased tubers than the seed imported in 1898. Potato rot seems to attack most readily tubers grown from seed long cultivated in the district. None of the tubers grown from newly-imported English seed showed any signs of disease. The "Triumph" variety imported in 1898 gave a yield containing a large proportion of diseased tubers. The whole area under potatoes, with the exception of two small plots purposely left unsprayed, was treated with Bordeaux mixture. It is doubtful whether this mixture was useful as a preventive of disease, but it undoubtedly increased the yield. The cost of applying the mixture was Rs. 20 per acre.

Three small plots were mulched by spreading a layer of dry grass over the land after the potatoes had been planted. Mulching is said to prevent the soil from being beaten down by rain and to encourage the formation of large well-shaped tubers. The outturn from the mulched plots was less than that of plots treated in the ordinary way.

The total cost of cultivation, excepting cost of seed, was Rs. 319. The total value of the produce is estimated to be Rs. 400. It is proposed to keep 50 or 60 maunds of the best potatoes for seed and to sell the remainder.

The experiments in the cultivation of paddy were made with four varieties of Sikkim paddy, and the ordinary low-land Khasi paddy. There were 28 plots, each 4 poles in area, on 12 of which paddy was sown broadcast in the middle of May, and on the remaining 16, transplanted in July. Both the Sikkim and Khasi varieties were killed by frost at the end of October. Rice cultivation at the elevation of the farm is impossible, as the climate there is too cold. Fodder and other crops were cultivated on a small scale. An area of 12 poles was sown with two English varieties of oats ("Lamb's Cluster" and "White Tartarian"), in October 1898. The crop came up vigorously on approach of spring, and flowered in May, and was reaped at the end of June. The the growth of the crop was luxuriant, but the yield of grain exceedingly poor. The outturn of "White Lamb's Cluster" seed was at the rate of 3 maunds 13 seers per acre; the other variety gave no yield at all. The result confirms the experience of the previous year that oats and other cereals cannot be successfully grown. Oats, however, can be grown as a fodder crop.

Six kinds of root crops were grown for cattle-food, *viz.*, beet, mangel, turnip, swede, country carrot, sohphlang. Turnip suffered from rot, the others did well. The rates of yield per acre were—

	Mds.
Carrot	140
Sohphlang	25¾
All others	215

The roots were used for feeding the farm cattle. The excessive rainfall at the farm does not injure root crops, which grow very well here.

The cultivation of lucerne has not been successful. The crop sown in the autumn of 1898, after making excellent growth during the spring, was attacked by blight as soon as the rains set in. There is now an area of 24 poles under lucerne sown in

October 1899 and February and March 1900. The crop has been sprayed with Bordeaux mixture, but it is too early yet to give the results. The soil of Upper Shillong is not suited to lucerne, which grows best on a dry, well-drained calcareous soil.

Two crops of linseed were sown, one in April 1899 and the other in March 1900. The first crop, though sown about two months later than the proper seed time, grew well, but remained green throughout the rains, producing a succession of pods which absorbed moisture and exuded mucilage. The second crop has already been attacked by its great enemy, yellow rust. This disease usually appears in Upper India whenever the weather continues wet or cloudy for a few days in succession. The climate of the Khasi Hills is not suited to this crop.

Five kinds of tobacco were sown in March 1899. The seedlings were not ready for transplantation till June. The area planted was 10 poles. The plants grew very vigorously, but showed no signs of maturing even at the end of October, when, owing to frosts setting in, the still green crop had to be taken in. The experiment has not been repeated this year.

The only other crops grown at the farm were maize, Khasi pulse, and pumpkin. The maize and Khasi pulse were grown for fodder. The pumpkins were used for cattle food during the winter.

There is a nursery containing numerous rooted seedlings and cuttings of apple, pear, and plum. The climate of the Khasi Hills is, however, not suited to the cultivation of these fruit-trees, as the fruits never ripen.

The experiment in making silage was again successful. The pit used last year was filled with 264 loads of wild grass and $3\frac{1}{4}$ maunds of green Khasi pulse in the second week of September. The silo was opened early in December, and its contents were used for feeding the farm cattle until the middle of March. The silage was of better quality than in the previous year. The total cost incurred on the silo was Rs. 43-12.

The farm now possesses 41 head of cattle, which are kept mainly for the manure, which is absolutely essential for the cultivation of the poor soil of the farm. The receipts from the sale of milk amounted to Rs. 507-13-9, and after deducting the cost of feeding, wages of cowherd, silo, and other expenses, there remained a net profit of Rs. 98. The Khasi cow is a very poor milker, the average yield of milk being one seer a day. Mr. Basu is of opinion that a dairy can be worked near Shillong at a profit. No one is, however, likely to start a dairy unless Government leads the way.

The total expenditure on the farm during the year amounted to Rs. 2,326-4-4, or, including the dairy, to Rs. 2,692-5-10.

Seed distribution.

27. In March 1900, 18 maunds and 10 seers of seed-potatoes from the stock of the Experimental Farm at Upper Shillong were distributed, at the recommendation of the Deputy Commissioner, Khasi and Jaintia Hills, to seven seims and lyngdohs of the district. The Subdivisional Officer, Mokokchang, and the Superintendent of Shillong Jail were each supplied with two maunds of potatoes for experimental purposes. At the Shillong Jail, the soil on which the seed was planted was poor, and the outturn, which was five times the quantity of seed used, was not satisfactory. It is proposed to repeat the experiment during the current year on better land. The results of cultivation by the Khasi cultivators to whom seed was distributed are not fully known. The Seim of Nongkhlaw reports a tenfold outturn, and considers the variety to be superior to the one ordinarily grown in the district. He has stored the outturn for use as seed next season. A fairly good result was also obtained at Myllim. Elsewhere, the outturn was more or less indifferent. The result of the experimental cultivation at Mokokchang has not yet been reported.

Sisal hemp and *rhea*.

28. There is little of interest to add to the account given in last year's report of the cultivation of *sisal* hemp on Dauracherra garden. The *sisal* plants continue to thrive and multiply, and there are now 25,000 seedlings in nurseries. A valuation of £ 42 sterling per ton has been received on a sample sent to London. Mr. Hunter has commenced to clear fibre with machinery, but some time must elapse before he will be in a position to report results.

The experiment in the cultivation of *rhea* referred to in last year's report was discontinued by Mr. Lawrie, as the land on which he had planted *rhea* was found to be unsuitable. Mr. Lawrie intends to try the cultivation of *rhea* on another piece of land.

Sugarcane.

29. Babu Debeswar Gossain, an Assamese gentleman, has been conducting for some years an interesting experiment in the cultivation of sugarcane at Gariagaon in the Golaghat subdivision. It is an attempt by an educated native gentleman to earn a respectable livelihood by the

pursuit of agriculture. Mr. Basu inspected the cultivation in November last. The area under sugarcane, of which there were some 80 *bighas* last year, is being extended every year. In the previous year, the crop occupied an area of 68 *bighas*, which yielded an outturn of about 1,300 maunds of jaggery equivalent to a yield of 57 maunds to the acre, which is more than three times the average recorded outturn in Assam. Babu Debeswar Gossain does not conceal the fact that he has found the business to be profitable. A specially interesting feature of the experiment is the improved method of cultivation followed on the farm. Before starting it, Babu Debeswar Gossain had experimented for several years with different varieties of sugarcane and different methods of growing it. As the result of his experiments, he has adopted the Mauritius system of cultivation, and selected the *Samsara* variety of cane (originally a West Indian variety, now extensively cultivated in Bengal) as more profitable than the methods and varieties in vogue in his own country. Some loss was caused to the crop on the farm by a new disease, probably the same as *Triocosphaeria sacchari*, which has caused great damage to the sugarcane crop in some parts of India. This new disease has now spread more or less all over the Assam Valley, but the loss caused by it is not yet very great.

Mr. Mati Lal Haldar, a Bengali tea planter, has also been experimenting with sugarcane and Egyptian cotton on the Monai tea estate in the Tezpur subdivision. Mr. Basu visited his farm in February last. At the time, there were 10 *bighas* of land under sugarcane. Several varieties were under trial, among which a thick black kind, known in Assam as *Kalapura* and in Bengal as the *Black Bombay*, was found to grow best. The Egyptian cotton was, however, a failure, the soil on which it had been planted being too sandy and poor to give a profitable outturn. Mr. Haldar has applied for a large grant of land on favourable terms for the purpose of growing sugarcane, tobacco, and India-rubber, as well as wheat, barley, and other crops, more or less new to the province. His application is now pending before Government.

Fruit-trees.

30. The citron plantation at Therriaghat was cleared of the sand and refuse deposited by the floods of June 1898, and the trees were pruned and manured. There are 117 healthy trees, of which 105 bore fruit during the year. About 1,600 citrons were gathered in October 1899 and made over to the Civil Surgeon, Shillong. The Principal Medical Officer and Sanitary Commissioner, Assam, having expressed the opinion that the citrons are of poor quality and possess no medicinal properties, it is proposed to abandon the plantation. The *lichi* and mango grafts planted in the compound of the Nongpoh dâk bungalow are reported to be dead. A small fruit plantation was started during the year by the Deputy Commissioner, Khasi and Jaintia Hills, at Umgsawriang in the Barpani Valley. In all, 46 trees have been planted. Among these are peach, plum, dewberry, pummello, lemon, long plum, sapota, and mulberry. With a few exceptions, the trees are reported to be flourishing.

Breeding bulls.

31. At the commencement of the year, there were five Government breeding bulls in the province, one at each of the stations of Silchar, Haflong, Sylhet (Jaintia), Naharjan tea estate (Sibsagar), and Shillong. The bull at Silchar died on the 25th December 1899. The statement below shows the cost of feed and keep of these animals and the successful coverings by them:

District.	Locality where the bull is stationed.	Breed of bull.	Wages of keeper.	Cost of food.	Miscellaneous.	Total.	Number of successful coverings during 1899-1900.		
							Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.			
Cachar	Silchar ...	Parehar breed ...	72 0 0	48 2 6	73 6 6	193 9 0	10	12	22
Ditto	Haflong ...	Khairigarh breed...	60 0 0	76 12 6	...	136 12 6	12	13	25
Sylhet	Haripur (Jaintia)	Ditto ...	95 0 0	66 2 0	54 7 9	215 9 9	4	9	13
Sibsagar	Naharjan tea estate.	Ditto ...	...	60 0 0	...	60 0 0	...*	...*	12
Khasi and Jaintia Hills ...	Shillong ...	Kosi breed ...	144 0 0	115 3 8	22 5 4	281 9 0	5	7	12
Total			371 0 0	366 4 8	150 3 7	887 8 3	31	41	84

* Information not available.

The number of successful coverings by the bull stationed at Haflong, shown in the statement above, represent only those of which an account was kept, but as the bull was allowed to roam about freely among the herds of cattle grazing in the fields, the number of coverings must have been much larger. There has been a great improvement in the stamp of cattle in the Haflong station and its neighbourhood. Of the two Sitamarhi bulls belonging to the North Lakhimpur Local Board, both kept in the charge of tea planters, one served successfully 17 cows and the other, which was at first a failure, served 9 cows towards the close of the year.

CHAPTER VI.

AGRICULTURAL EDUCATION.

Agricultural education.

32. Mr. Monahan's Manual on Mensuration and Surveying mentioned in paragraph 51 of last year's report has been published and distributed. Arrangements are being made to have the work translated into Bengali and Assamese.

CHAPTER VII.

PUBLICATION OF AGRICULTURAL INFORMATION.

Weather and crop reports.

33. The weekly weather and crop reports and rainfall returns were, as usual, prepared in this office for publication in the Gazette. The preliminary and final forecasts of the mustard crop were prepared and forwarded to the Director General of Statistics.

Publication of special works.

34. During the year a note on the lac industry of Assam was written by Mr. B. C. Basu and published as Agricultural Department Bulletin No. 6. A monograph on the silk fabrics of Assam, written by Mr. B. C. Allen, I.C.S., was also published during the year. Mr. J. Donald is now collecting materials for writing a monograph on ivory carving in Assam. The revision of Bulletin No. 2 of this Department (Names of Field-crops grown in the Province of Assam) is now under progress. The revision is being carried out by Mr. Basu, working under the advice of Dr. Watt, Reporter on Economic Products to the Government of India. The Bulletin has been provisionally revised and proof copies have been circulated to District Officers for correction. A large number of botanical specimens of cultivated plants has been submitted to Dr. Watt, Reporter on Economic Products to the Government of India, with a view to get their correct scientific names. In the course of Mr. Basu's enquiry during the last two years, a number of plants cultivated in this province, which did not appear in Bulletin No. 2, came to light.

The revision of Bulletin No. 2 has been undertaken as a preliminary step to a systematic enquiry into, and report on, the principal crops of the province which will be taken up during the next few years in consultation with Dr. Watt. It is proposed to prepare these reports on the lines of Messrs. Duthie and Fuller's well-known work on the field and garden crops of the North-Western Provinces and to issue them in a serial form. The first report of the series will deal with the field-pulses of Assam, and is expected to be published in the course of the present year. A report is also under preparation on the cultivation of plantain in the Assam Valley, for which material was collected by Mr. M. N. Ghosh, Officiating Assistant to the Director of Land Records and Agriculture, Assam, during the year. Mr. Basu continued his enquiry into the cultivation of rice in the Assam Valley. The materials collected by him will be utilised in preparing the report on rice cultivation in Assam, which the Department hopes to be able to publish next year.

Papers communicated to the *Agricultural Ledger*.

35. A list of papers communicated to the Reporter on Economic Products, through the agency of this Department, for incorporation in the *Agricultural Ledger*, is given in Appendix J.

Papers received from, and communicated to, other Provincial Departments.

36. A copy of Bulletin No. 3 on Jowar cultivation in Berar or the Hyderabad Assigned Districts, and copies of Madras Bulletins Nos. 37 of 1899 and 38 of 1900 on ground-nut, and of Annual Reports of the different Provincial Departments were received during the year. Bulletin No. 6 of this Department on the Lac Industry in

Assam, monograph on the Silk cloths of Assam prepared by Mr. B. C. Allen, I.C.S. and the Annual Report of this Department were distributed to the Departments of Land Records and Agriculture of other provinces from the Secretariat.

CHAPTER VIII.

FINAL.

37. The following statement gives details of the expenditure incurred by this Department during the year, and compares the figures with those of the preceding year :

Expenditure.

Year.	Superintendence, etc,	Settlement offices.	Survey detachment.	Survey schools.	Kanungo establishment.	Registration of trade.	otal.
1	2	3	4	5	6	7	
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1898-99 ...	57,351 8 3	60,264 14 10	...	2,116 0 8	1,46,890 14 3	4,560 7 8	2,71,183 13 8
1899-1900 ...	53,459 10 7*	37,440 11 2†	4,342 7 0‡	2,184 0 3	1,75,433 8 3§	4,396 4 1‖	2,77,256 9 4

* This includes—

	Rs.	a.	p.
(*a*) Head office charges	42,669	1	3
(*b*) Charges for the office of the Superintendent of Land Records ...	6,901	1	3
(*c*) Experimental cultivation	2,763	14	4
(*d*) Veterinary charges	827	8	3
(*e*) Raingauge „	142	2	9
(*f*) Economic collection	215	14	9
Total	53,459	10	7

† This includes—

(*a*) Cost of Cachar settlement	20,172	14	2
(*b*) „ „ *ilam* settlement	17,267	13	0
Total—	37,440	11	2

‡ This is exculsive of a sum of Rs. 9,026-1-3 spent by the survey detachment on account of traverse and topographical works, which is debitable to Imperial.

§This includes—

	Rs.	a.	p.
(*a*) Registrar kanungo	7,459	13	5
(*b*) Assistant registrar kanungo	3,879	10	4
(*c*) Supervisor kanungo	22,670	3	9
(*d*) District mandals	1,34,041	3	10
(*e*) Chainmen and peons	104	15	1
(*f*) Temporary establishment	257	2	11
(*g*) Travelling allowance	627	10	7
(*h*) Petty construction and repairs	202	7	3
(*i*) Cost and repair of instruments	441	2	0
(*j*) Rewards	1,854	14	1
(*k*) Map charges	455	11	11
(*l*) Purchase of country stationery (*m*) Office expenses and miscellaneous }	3,438	9	1
Total	1,75,433	8	3

‖This includes—

(*a*) Registration of river-borne trade	3,146	15	7
(*b*) Provincial statistics (frontier trade)	1,249	4	6
Total	4,396	4	1

There has been an increase of Rs. 6,072-11-8 in the total expenditure during the year, as compared with 1898-99, due chiefly to the payment of the large arrears of mandals' pay which accrued in 1898-99. The decrease noticeable under the head "Superintendence, etc.," is due to (1) abolition of the office of the Superintendent of Land Records from 1st November 1899, and (2) decrease in the expenditure on account of (*a*) veterinary charges owing to the death of one of the breeding bulls towards the latter part of the year, (*b*) raingauge charges, and (*c*) economic collections.

The decrease under the head "Settlement offices" is due to the reduction in the establishment and subsequent abolition of the Cachar Settlement office and to the reduction in the field establishment entertained for the *ilam* settlement operations in Sylhet.

Shillong,
The 2nd July 1900.

D. H. LEES,
Offg. Director, Department of Land Records and Agriculture, Assam.

APPENDICES A.—J.

APPENDIX A.

Diary Statement of Sub-Deputy Collectors for the year 1899-1900.

Name of Sub-Deputy Collector.	District.	Subdivision.	Number of days in charge.	Number of days on tour.										Number of days at office work.	Number of days without work.						Remarks.
				In cadastral mauzas.					In non-cadastral mauzas.												
				Running check-lines.	Testing cr. ps.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work: inspecting theodolite stations.	Testing measurements.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work.	Total.		Travelling from place to place.	Gazetted holidays.	Sick.	Privilege leave.	Leave on half pay.	Leave without pay.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Babu Purna Chandra Mitra	Sylhet ...	North Sylhet (Jaintia) ...	365	38	30	37	28	25	...	...	...	5	163	160	6	15	...	21	...	...	42	
Munshi Faizuddin Ahmed	Goalpara ...	Bijni tahsil	22	6	...	6	1	7	...	...	...	...	20	2	...	...	...	...	...	...	...	
Babu Janaki Nath Das	,, ...	,, ...	340	32	21	9	18	54	7	...	2	9	152	180	...	8	...	...	...	...	8	
Ditto	,, ...	Dhubri	19	1	...	2	...	...	...	1	...	7	11	6	2	...	...	...	...	...	2	
Maulvi Abrar Hussain	,, ...	,, ...	165	9	...	...	...	4	19	4	...	21	57	78	1	21	8	...	...	...	30	
Babu Laksheswar Sarma	Kamrup ...	Barpeta(a)	109	19	...	14	5	23	3	...	...	...	64	19	16	4	...	...	...	...	20	
,, Debendra Kumar Mukharji	,, ...	,, ...	49	...	...	9	1	...	...	...	...	...	10	37	...	2	...	...	...	...	2	
,, Rajani Kanta Bardalai	,, ...	,, ...	195	36	16	25	3	25	14	...	...	...	119	65	1	10	...	...	...	...	11	
,, Ditto	,, ...	Gauhati	170	13	...	49	1	11	6	...	...	2	82	71	3	2	7	5	...	...	17	
,, Debendra Kumar Mukharji	,, ...	,, ...	222(b)	24	28	29	2	47	9	2	...	...	141	47	13	21	...	...	...	...	34	
,, Gopal Chandra Puri Bhuiyan	,, ...	,, ...	34	8	...	9	...	3	...	...	...	...	20	...	4	...	10	...	...	...	14	
,, Hem Chandra Gosvami	,, ...	,, ...	300	26	29	21	2	89	2	2	...	...	171	95	7	15	12	...	...	...	34	

harat Chandra Das	,, ...	Gauhati	149(c)	13	42	3	7	27	...	...	...	...	92	32	23	2	...	...	...	...	25
Bhola Nath Das	,, ...	Boko tahsil	177	20	...	3	...	63	...	...	...	1	87	67	...	3	10	...	30	...	23
Ditto	,, ...	Gauhati tahsil ...	158	...	1	11	5	22	3	2	1	30	75	80	...	3	...	...	...	...	3
h Jajnesvar Das Gupta	Darrang ...	Mangaldai	365	60	6	41	12	32	...	...	...	...	151	161	...	6	5	42	...	...	53
, Mahendra Chandra De	,, ...	Tezpur	359(d)	18	4	34	1	43	1	1	1	49	152	85	1	1	17	...	103	...	122
, Rama Kanta Barua	,, ...	Mangaldai tahsil ...	353(e)	14	5	4	25	121(f)	...	...	...	...	169	165	3	12	4	...	...	...	19
hnshi Didaruddin Ahmed	,, ...	Patharughat tahsil ...	342	18	...	21	4	112	...	...	...	...	155	152	7	19	...	18	...	...	35
abu Radha Mohan Das...	Nowgong ...	Nowgong	365	27	10	25	36	103	3	1	1	12	218	102	...	15	...	30	...	...	45
,, Harendra Kumar Ghosh	,, ...	,, ...	365	30	6	47	25	114	...	...	...	...	322	99	12	25	...	7	...	...	44
,, Sarat Chandra Lahiri	Sibsagar ...	Golaghat	351(g)	37	4	13	16	119	4	...	...	...	193	88	...	8	...	62	...	...	70
,, Radha Kanta Handiqui	,, ...	Jorhat	104	6	...	...	7	29	...	...	...	...	42	67	...	5	...	...	...	...	5
,, Laksheswar Sarma	,, ...	,, ...	241(h)	31	4	...	15	60	...	...	...	...	110	107	12	22	...	...	...	...	34
,, Benudhar Rajkhowa	,, ...	Sadr	348(i)	26	1	41	12	104	...	...	...	...	184	81	41	42	...	...	...	...	83
Munshi Didaruddin Ahmed	,, ...	,, ...	5	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...
,, Faizuddin Ahmed	,, ...	Sibsagar tahsil ...	328	20	6	14	50	92	...	...	...	...	182	146	...	...	...	...	...	...	...
Babu Radha Kanta Handiqui	,, ...	Namtidal tahsil ...	243	12	37	13	10	47	...	...	...	...	121	120	...	2	...	...	...	...	2
,, Hem Chandra Gosvami	Lakhimpur ...	Dibrugarh	54	1	...	...	...	...	...	...	...	6	7	44	1	2	...	...	...	...	3
,, Gopal Chandra Puri Bhuiyan	,, ...	,, ...	160	...	...	...	...	4	7	7	...	2	20	117	1	22	...	...	...	...	23
,, Ram Kumar Aditya	,, ...	,, ...	149	10	7	9	13	2	...	8	12	25	86	51	2	10	...	...	...	...	12
Ditto	,, ...	North Lakhimpur ...	208	2	...	15	21	14	1	9	3	...	65	118	...	25	...	...	...	...	25
Maulvi Abrar Husssain	,, ...	,, ...	146(j)	32	7	1	4	28	9	3	...	9	93	42	2	9	...	...	...	...	11
Babu Gopal Chandra Puri Bhuiyan	,, ...	Dibrugarh tahsil ..	151	...	...	2	4	36	...	...	...	5	47	94	...	10	...	...	...	...	10

(a) The subdivision was without a Sub-Deputy Collector for 12 days.

(b) Exclusive of 33 days spent in survey camp. Out of the 222 days, he was in independent charge for 158 days, and was placed to learn work under the Senior Sub-Deputy Collector, Babu Rajani Kanta Bardalai, for 64 days.

(c) Exclusive of 31 days spent in Survey Camp.

(d) Ditto 6 days spent at Department Examinations.

(e) Ditto 10 days ditto ditto.

(f) Inclusive of days spent in collection of revenue.

(g) Exclusive of 14 days spent at Departmental Examinations.

(h) Ditto 10 ditto ditto.

(i) Ditto 12 ditto ditto.

(j) Ditto 11 ditto ditto.

APPENDIX B.

Diary Statement of Supervisor, Kanungos and Surveyors for the year 1899-1900.

Name of supervisor kanungo or surveyor.	Name of circle.	District.	Subdivision.	Number of days in charge.	Number of days on tour.										Number of days at office work.	Number of days without work.							Remarks.
					In cadastral mauzas.					In non- adastral mauzas.													
					Running check-lines.	Testing crops.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work: inspecting theodolite stations, etc.	Testing measurements.	Examining mandals' or patwaris' work.	Enquiring into cases.	Miscellaneous work.	Total.		Travelling from place to place.	Gazetted holidays.	Sick.	Privilege leave.	Leave on half pay.	Leave without pay.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Binod Behari Chaudhuri ...	Hailakandi ...	Cachar ...	Hailakandi ...	365	1	29	...	69	8	...	...	...	...	107	194	17	44	...	3	...	...	64	
Dinanath Ghosh	Saraspur ...	„ ...	„ ...	365	10	8	...	18	4	...	...	...	...	40	264	6	55	...	...	...	...	61	
Ramdayal Chakravarti ...	Chatlahaor ...	„ ...	Sadr ...	365	5	15	...	10	1	...	...	...	...	31	265	9	60	...	...	...	...	69	
Gopi Charan De... ...	Katigora ...	„ ...	„ ...	365	2	...	4	27	13	...	...	...	...	46	235	13	60	1	10	...	...	84	
Shyama Charan Guha ...	Udharband ...	„ ...	„ ...	365	2	...	4	29	8	...	...	...	...	43	242	4	61	7	8	...	...	80	
Sambhu Ram Das ...	Barakpar ...	„ ...	„ ...	365	...	4	...	1	1	...	...	...	...	6	283	1	70	5	...	...	...	76	
Jogesh Chandra Mitra ...	Sonapur ...	„ ...	„ ...	365	12	4	...	14	1	...	...	...	...	31	289	12	26	7	...	...	...	45	
Kamini Kumar De ...	Lakhipur (*a*) ...	„ ...	„ ...	290	...	...	...	...	...	...	...	...	...	...	210	...	70	10	...	...	...	80	
Sarat Chandra Sarma ...	„ ...	„ ...	„ ...	28	...	...	...	...	...	...	...	...	...	...	21	...	7	...	...	...	...	7	
Hari Mohan Das ...	Kanairghat ...	Sylhet ...	North Sylhet (Jaintia).	365	7	44	38	40	55	...	...	...	...	184	152	9	20	...	...	...	...	29	
Sarat Chandra Sarma ...	Jaintiapur ...	„ ...	„ ...	337	19	13	35	23	45	...	...	...	...	135	154	12	20	11	5	...	...	48	

Jajneswar Datta ...	...	,,	...	,,	...	,,	...	28	...	...	6	10	12	...	...	...	...	28	...	...	...	...	...	...	...	..
Abdus Sabur ...	...	Haripur	...	,,	...	,,	...	365	36	60	42	35	19	...	...	...	...	192	169	...	4	...	...	...	...	4
Sasi Kumar Kar...	...	Goainghat	...	,,	...	,,	...	84	1	2	7	6	7	...	...	...	...	23	37	...	...	24	...	...	...	24
Gauri Charan Das	...	,,	...	,,	...	,,	...	153	...	7	5	6	3	...	...	...	...	21	95	3	20	14	...	...	...	37
Jogeswar Datta ...	...	,,	...	,,	...	,,	...	10	...	...	...	...	...	...	...	...	...	...	10	...	...	...	...	...	...	...
Barada Kanta Ganguli	...	,,	...	,,	...	,,	...	118	6	32	12	29	35	...	...	...	...	114	...	4	...	...	...	...	...	4
Rati Ram Das ...	...	Bijni and Sidli		Goalpara	...	Dhubri	...	365	82	16	33	3	80	...	...	...	...	214	142	2	7	...	...	...	...	9
Shib Nath Deka...	...	Barpeta	...	Kamrup	...	Barpeta	...	365	91	13	8	4	37	5	6	...	70	234	97	18	6	10	...	...	...	34
Ellias Sheikh ...	...	Bajali	...	,,	...	,,	...	365	98	14	26	50	17	...	...	...	...	205	150	4	4	2	...	...	...	10
Bhagirath Deka ...	...	Roha	...	,,	...	,,	...	365	95	25	18	16	26	10	8	...	4	202	112	5	...	9	...	37	...	51
Sib Ram Das ...	...	Beltola	...	,,	...	Gauhati	...	365	45	7	...	51	89	...	...	...	...	192	162	14	5	2	...	...	...	21
Mantan Ram Das	...	Chhaigaon	...	,,	...	,,	...	365	63	8	8	23	72	12	2	2	6	196	149	12	8	...	...	...	...	20
Naomal Das ...	...	Boko	...	,,	...	,,	...	365	41	28	34	6	62	9	7	3	...	190	113	26	7	14	15	...	...	62
Tita Ram Gagai	...	Palasbari	...	,,	...	,,	...	365	41	30	12	27	111	...	...	...	...	221	113	18	9	4	...	...	...	31
Bati Ram Das ...	...	Patidarrang	...	,,	...	,,	...	61	4	...	...	...	...	...	...	...	...	4	9	...	...	48	...	...	...	48
Purnananda Das	...	,,	...	,,	...	,,	...	273	28	44	...	6	14	...	...	...	...	92	160	7	14	...	...	...	...	21
Konnath Deka ...	...	,,	...	,,	...	,,	...	31	3	...	...	5	...	...	...	...	...	8	21	2	...	...	...	...	...	2
Ditto ...	...	Rangiya	...	,,	...	,,	...	129	9	14	...	...	17	...	...	...	...	40	63	4	3	19	...	...	...	26
Laghanu Ram Das	...	,,	...	,,	...	,,	...	236	32	14	...	...	77	...	...	...	...	123	93	7	13	...	...	...	...	20
Ramrath Datta	...	Hajo	...	,,	...	,,	...	183	32	12	28	14	21	...	...	...	...	107	69	...	...	...	...	7	...	7
Santi Ram Das ...	...	,,	...	,,	...	,,	...	182	5	40	52	16	21	...	...	...	...	134	30	3	...	...	15	...	...	18
Joy Ram Deka ...	...	Barkhetri	...	,,	...	,,	...	214	40	...	3	4	46	...	...	...	...	93	121	...	...	...	...	...	...	...
Manjur Ram ...	...	,,	...	,,	...	,,	...	79	25	8	2	4	30	...	...	...	...	69	10	...	...	...	...	...	...	...
Jagat Ram Das ...	...	,,	...	,,	...	,,	...	43	20	...	...	1	20	...	...	...	...	41	2	...	...	...	...	...	...	...
Rangdev Sarma ...	...	Barama	..	,,	...	,,	...	189	24	10	4	7	11	...	...	...	...	56	118	4	3	8	...	...	...	15

(a) The circle was without a supervisor kanungo for 47 days.

APPENDIX B—*continued.*

Name of supervisor kanungo or surveyor.	Name of circle.	District.	Subdivision.	Number of days in charge.	Number of days on tour.										Number of days at office work.	Number of days without work.							Remarks.
					In cadastral mauzas.					In non-cadastral mauzas.													
					Running check-lines.	Testing crops.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work: inspecting theodolite stations, etc.	Testing measurements.	Examining mandals' or patwaris' work.	Enquiring into cases.	Miscellaneous work.	Total.		Travelling from place to place.	Gazetted holidays.	Sick.	Privilege leave.	Leave on half pay.	Leave without pay.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ramrath Datta ...	Barama ...	Kamrup ...	Gauhati ...	176	31	25	9	12	41	...	...	...	...	118	41	3	8	6	...	...	...	17	
Santi Ram Das ...	Nalbari ...	„ ...	„ ...	179	11	...	...	44	23	...	...	...	...	78	71	14	...	16	...	...	...	30	
Bathu Ram Das ...	„ ...	„ ...	„ ...	65	...	1	9	5	8	...	...	...	...	23	11	1	15	...	...	...	15	31	
Nar Nath ...	„ ...	„ ...	„ ...	90	...	36	10	12	10	...	...	...	...	68	15	7	...	...	...	...	...	7	
Purnananda Das ...	„ ...	„ ...	„ ...	31	9	...	...	6	...	...	...	...	...	15	15	1	...	...	...	...	...	1	
Jagat Ram Das ...	Tambulpur ...	„ ...	„ ...	224	31	...	23	...	57	...	...	...	2	113	71	8	6	26	...	...	...	40	
Joy Ram Deka ...	„ ...	„ ...	„ ...	141	34	15	16	1	41	...	...	...	...	107	34	...	...	...	...	...	...	...	
Chandra Kanta Sarkar ...	Patharughat ...	Darrang ...	Mangaldai ...	365	106	6	6	13	72	...	...	...	...	203	149	13	...	...	...	...	...	13	
Kalamani Das ...	Mangaldai ...	„ ...	„ ...	365	86	11	...	30	91	...	...	...	...	218	137	2	6	2	...	...	...	13	
Rammal Das ...	Kalaigaon ...	„ ...	„ ...	365	93	29	...	14	84	...	...	...	...	220	139	...	1	5	...	...	...	6	
Jagannath Deka ...	Bengbari ...	„ ...	„ ...	274	98	1	...	...	62	...	...	...	...	161	93	2	10	8	...	...	...	20	
Mani Ram Keot ...	„	„ ...	„ ...	91	29	...	...	17	18	...	...	...	...	64	24	3	...	...	...	...	...	3	

Ganga Ram Das	...	Eastern	...	„	...	Tezpur	...	365	58	25	17	9	118	....	...	...	...	227	121	1	16	...	...	...	...	17
Manu Ram Talukdar	...	Western	...	„	...	„	...	365	49	60	...	11	87	...	...	...	...	207	158	...	...	...	...	...	...	...
Molan Chandra Bora	...	Silghat	...	Nowgong	...	Nowgong	...	365	102	11	9	78	12	3	...	...	...	215	126	8	3	1	12	...	...	24
Puaram Mahanta	...	Town	...	„	...	„	...	365	77	20	...	74	52	...	...	...	...	223	91	3	17	21	10	...	...	51
Tara Nath Borah	...	Doboka	...	„	...	„	...	365	52	45	32	17	29	...	...	...	42	217	113	18	17	...	...	...	...	35
Gazendra Narayan Das	...	Mayang	...	„	...	„	...	365	78	10	6	...	110	...	...	...	...	204	132	12	15	2	...	...	...	29
Minaram Das ...	...	Roha	...	„	...	„	...	365	145	10	19	12	39	...	...	...	...	225	116	7	9	8	...	...	...	24
Gobinda Ram Datta	...	Dhing	...	„	...	„	...	339	78	11	5	11	109	...	...	...	...	214	104	3	14	...	4	...	...	21
Dakara Ahom ...	...	„	...	„	...	„	...	26	...	...	...	...	...	...	...	...	...	...	26	...	...	...	...	...	...	...
Surath Chandra Bora	...	Gerua	...	„	...	„	...	365	109	16	...	1	68	...	...	...	...	194	139	10	13	...	6	3	...	32
Jiu Ram Das ...	...	Ghugua	...	„	...	„	...	365	71	27	17	1	87	...	...	...	...	203	120	11	9	19	3	...	...	42
Durga Ram Datta	...	Northern	...	Sibsagar	...	Golaghat	...	56	24	...	...	...	27	...	...	...	...	51	...	...	4	1	...	...	...	5
Lalit Ram Chaudhuri	...	„	...	„	...	„	...	309	29	9	...	10	75	...	...	...	...	123	164	1	10	2	...	...	...	22
Bhakat Ram Datta	...	Southern	...	„	...	„	...	365	40	10	...	14	93	...	...	...	...	157	186	3	3	16	...	...	...	22
Kali Ram Das ...	...	Eastern	...	„	...	Jorhat	...	365	48	16	18	49	63	1	...	...	...	195	145	...	3	12	10	...	...	25
Mahi Ram Das (Senior)	...	North-Western		„	...	„	...	365	54	11	11	62	53	3	...	...	...	194	149	...	15	7	...	...	...	22
Ditto (Junior)	...	South-Western		„	...	„	...	365	56	16	19	32	76	...	...	...	...	199	130	11	7	10	8	...	...	36
Sib Nath Sarma	...	Majuli	...	„	...	„	...	331	97	6	8	4	55	6	...	1	2	179	127	13	...	12	...	...	...	25
Kula Nath Sarma	...	„	...	„	...	„	...	34	...	...	...	...	10	...	...	...	...	10	16	8	...	...	...	...	...	8
Sib Ram Bora ...	...	Eastern	...	„	...	Sadr	...	263	38	38	35	1	57	1	...	...	...	170	37	4	20	25	7	...	...	56
Manpur Gagai ...	...	„	...	„	...	„	...	17	6	...	...	2	5	...	...	...	...	13	1	3	...	...	...	...	...	3
Malbhog Gagai ...	...	„	...	„	...	„	...	85	...	...	...	...	...	...	...	...	...	...	85	...	...	...	...	...	...	...
Ditto ...	...	Central	...	„	...	„	...	61	34	...	...	...	5	...	...	...	13	52	9	...	...	...	...	...	...	...
Gobinda Nath Roy	...	„	...	„	...	„	...	304	57	14	...	11	30	...	...	...	51	163	123	...	17	1	...	...	...	18
Lalit Ram Chaudhuri	...	Western	...	„	...	„	...	61	15	...	...	...	6	...	...	...	...	21	20	7	3	...	10	...	...	20

APPENDIX B—*concluded.*

Name of supervisor kanungo or surveyor.	Name of circle.	District.	Subdivision.	Number of days in charge.	Number of days on tour.										Number of days at office work.	Number of days without work.						Remarks.
					In cadastral mauzas.					In non-cadastral mauzas.												
					Running check-lines.	Testing crops.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work: inspecting theodolite stations, etc.	Testing measurements.	Examining mandals' or patwaris' papers.	Enquiring into cases.	Miscellaneous work.	Total.		Travelling from place to place.	Gazetted holidays.	Sick.	Privilege leave.	Leave on half pay.	Leave without pay.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Durga Ram Datta ...	Western ...	Sibsagar ...	Sadr ...	283	67	17	...	18	5	...	...	...	...	107	124	16	10	...	26	...	...	52	
Khageswar Gagai ...	„ ...	„ ...	„ ...	21	...	...	...	3	...	...	...	...	...	3	18	...	...	...	...	...	...	...	
Maheswar Das	Dibrugarh ...	Lakhimpur ...	Dibrugarh ...	365	53	19	15	55	65	...	...	...	...	207	143	2	10	...	3	..	...	15	
Lakshmi Kanta Das ...	Chabua ...	„ ...	„ ...	365	39	18	21	4	103	...	...	...	...	185	148	2	30	...	...	...	...	32	
Bhabi Ram Das	North Lakhimpur.	„ ...	„ ...	365	59	20	46	17	30	15	12	3	7	209	126	10	16	4	...	...	...	30	
Samudra Narayan Das ...	...	Kamrup ...	Gauhati ...	350	5	4	...	1	10	20	20	20	21	101	224	10	15	...	...	...	...	25	
Muzaffar Ali	...	Lakhimpur ...	Dibrugarh ...	365	...	...	...	...	...	52	...	...	59	111	173	3	38	2	...	38	...	81	

APPENDIX C.

Work Statement of District and Subdivisional Officers for the year 1899-1900.

Name of Officer.	District.	Subdivision.	Area cadastrally surveyed.														Area not cadastrally surveyed.						Area of concealed cultivation discovered (in acres).	Area found wrongly classfied.		
			Total number of supervisor kanungos.	Total number of supervisor kanungos whose work was inspected.	Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		Total number of mandals or patwaris.	Number of mandals or patwaris		Total area tested as returned by mauzadars, in acres.	Total area as found on remeasurement, in acres.	Percentage of errors in mauzadars' papers.		*Basti* shown as		
							Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *kalans*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringait* (acres).	*Rupit* shown as *faringait* (acres).
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
PART I.—DEPUTY COMMISSIONERS.																										
Captain P. R. T. Gurdon	Kamrup ...	.....	14	12	...	274	122	...	...	...	...	...	...	...	...	...	26	12	...	...	...	...	...	...	...	...
B. C. Allen, Esq.	Darrang ...	.....	6	2	3	116	53	3	3	52	59	2·17	12,381	0·11	...	...	23	1	...	...	...	...	...	...	...	...
J. F. Gruning, Esq.	Nowgong ...	.....	8	...	53	161	31	2	1	48	70	0·96	30,784	0·02	...	...	7	...	...	...	...	...	...	...	...	...
W. J. Reid, Esq.	Lakhimpur ...	.....	3	...	...	49	...	...	...	...	...	...	...	...	...	...	59	13	...	...	...	...	...	...	...	...
PART II.—SUBDIVISIONAL OFFICERS, ASSISTANT COMMISSIONERS, AND EXTRA ASSISTANT COMMISSIONERS.																										
Rai Madhab Chandra Bardalai, Bahadur, Extra Assistant Commissioner.	Kamrup ...	Barpeta ...	3	...	1	63	12	1	1	11	22	0·77	11,512	0·04	14	35	7	...	...	...	...	...	...	...	...	...
Munshi Muhib-Uddin Ahmed, Extra Assistant Commissioner.	,,	,,		...	...		2	...	...	...	...	...		...	...	...		1	...	...	...	...	...	...	...	...
F. W. Strong, Esq., Assistant Commissioner ...	Darrang ...	Mangaldai ...	4	4	25	82	82	15	6	74	95	2·58	7,792	0·21	...	...	2	...	...	...	...	...	...	...	...	...
Babu Abhaya Sankar Guha, Extra Assistant Commissioner.	,,	,,	4	3	20	82	4	10	4	33	73	1·97	7,792	0·16	722	603	2	...	...	...	...	...	...	...	...	...
James Donald, Esq.	Sibsagar ...	Golaghat ...	2	...	1	52	11	2	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...
L. O. Clarke, Esq.	,,	Jorhat ...	4	2	4	72	12	4	5	45	62	1·75	8,304	0·13	...	...	5	3	...	...	...	...	...	...	...	...

APPENDIX D.

Work Statement of Sub-Deputy Collectors for the year 1899-1900.

Name of Sub-Deputy Collector.	District.	Subdivision or tahsil.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area (in acres) of concealed cultivation discovered.	Area found wrongly classified.		
			Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		Total number of mandals or patwaris.	Number of mandals or patwaris		Total area (in acres) as returned by mauzadars.	Total area (in acres) as found on remeasurement.	Percentage of errors in mauzadars' papers.		*Basti* shown as	
					Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *kutats*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Rupit* shown as *faringati* (acres).
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Babu Purna Chandra Mitra	Sylhet ...	North Sylhet (Jaintia).	374	52	52	31	62 (*a*)	601	1,678	34·28	1,323	16·57	5,219	4,392	...	...	...	...	...	...	...	...	...	...
„ Janaki Nath Das	Goalpara ...	Dhubri ...	9	22	2	1	1 (*a*)	20	54	1·00	4,310	0·15	...	...	9	5	...	...	...	...	...	...	...	...
Maulvi Abrar Hussain	„ ...	„ ...	12	22	6	4	9 (*a*) 3 (*c*) 12 (*d*)	65 34 8	136 60 19	4·53 1·32 3·01	4,310	0·67	...	...	9	8	4	293	283	3·40	...	...	...	22
Babu Janaki Nath Das	„ ...	Bijni tahsil ...	41	13	13	13	38 (*a*)	464	755	22·72	5,379	2·70	405	1,100	3	3	3	67	68	1·49	2	...	...	2
„ Laksheswar Sarma	Kamrup ...	Barpeta ...	51	63	1	30	30 (*a*)	389	722	16·15	11,512	0·89	663	3,015	7	3	3	88	89	1·12	13	...	...	6
„ Debendra Kumar Mukharji	„ ...	„ ...	...	63	40	...	...	...	...	...	...	...	...	...	7	5	...	...	...	...	...	...	...	...
„ Rajani Kanta Bardalai	„ ...	„ ...	48	63	63	49	52 (*a*)	530	894	27·11	11,512	1·50	915	4,213	7	6	6	4,242	3,854	9·14	47	3	10	165
Ditto	„ ...	Gauhati ...	16	82	80	15	18 (*a*)	277	361	9·86	10,295	0·61	44	240	12	10	2	134	135	0·74	...	...	...	...
„ Debendra Kumar Mukharji	„ ...	„ ...	110	59	59	49	30 (*a*)	477	893	21·60	7,090	1·95	2,009	1,541	12	1	9	190	195	2·20	14	...	12	14
„ Gopal Chandra Puri Bhuiyan	„ ...	„ ...	7	139	18	5	8 (*a*)	106	174	5·46	13,640	0·26	...	...	2	...	...	...	...	...	3	...	...	...
„ Hem Chandra Gosvami	„ ...	„ ...	90	139	94	57	47 (*a*)	694	699	23·17	13,640	1·08	2,112	...	2	2	2	38	39	2·63	13	...	10	6

,, Bhola Nath Das ...	...	...	,,	...	Boko tahsil	...	18	28	28	14	27 (a)	405	554	12·90	3,673	2·52	...	...	2	2	1	33	32	3·03	...	...	...	3
											2 (b)			1·57															
Ditto ...	...	...	,,	...	Gauhati tahsil	...	1	13	13	2	...	...	...	...	1,050	...	35	43	2	2	1	...	...	...	1	...	2	...
,, Bharat Chandra Das	...	...	,,	...	Gauhati	...	106	139	68	47	14 (a)	169	155	5·12	13,640	...	385	334	...	...	...	...	...	...	16	5	...	40
,, Jajneswar Das Gupta	...	...	Darrang	...	Mangaldai	...	214	49	49	49	99 (a)	832	1,283	35·00	3,654	8·20	6,452	6,156	...	...	...	...	...	...	6	...	...	...
											38 (b)	203	326	11·86														
											4 (d)	...	...	2·02														
,, Mahendra Chandra De	...	...	,,	...	Tezpur	...	51	34	28	26	10 (a)	116	216	5·85	4,589	1·77	60	49	21	4	1	15	20	33·33	8	...	...	...
											14 (b)	175	303	6·81														
											1 (c)	9	19	0·28														
,, Rama Kanta Burua	...	...	,,	...	Madgaldai tahsil	...	185	13	13	10	16 (a)	161	233	6·05	1,574	2·46	1,491	557	2	2	...	...	...	...	2	...	4	...
Munshi Didaruddin Ahmed	...	...	,,	...	Patharughat tahsil		48	20	20	14	36 (a)	314	419	16·84	2,564	4·20	583	793	...	...	...	...	...	...	...	...	...	...
Babu Radha Mohan Das ...	...	...	Nowgong	...	Nowgong	...	85	82	82	52	27 (a)	262	294	11·94	11,526	0·89	2,000	1,200	6	6	1	...	...	...	...	...	...	...
											7 (b)	78	96	4·01														
											16 (c)	151	171	5·31														
											12 (d)	...	...	6·40														
,, Harendra Kumar Ghosh	...	...	,,	,,	,,	...	112	79	79	61	49 (a)	617	1,016	31·24	19,258	1·02	1,242	2,167	1	1	...	...	...	...	45	...	...	...
,, Sarat Chandra Lahiri	...	...	Sibsagar	...	Golaghat	...	179	52	52	45	33 (a)	400	619	15·60	6,301	2·23	467	2,781	3	2	2	67	68	1·49	...	...	2	...
											16 (b)	139	177	6·43														
											17 (d)	...	...	3·70														
,, Radha Kanta Handiqui	...	...	,,	...	Jorhat	...	8	72	2	8	9 (a)	102	142	4·70	8,304	0·51	86	99	...	...	...	...	...	...	...	...	...	...
											4 (b)	33	51	1·94														
											(c)	...	...	3·75														
,, Laksheswar Sarma ...	...	...	,,	...	,,	...	34	72	72	21	17 (a)	208	406	9·13	8,304	0·85	772	585	5	3	...	...	...	...	...	...	2	12
											4 (b)	56	106	1·98														
											(c)	...	...	5·60														
,, Benudhar Rajkhowa	...	...	,,	...	Sadr	...	61	31	31	31	31 (a)	410	588	15·89	3,724	3·23	3	2	...	...	...	...	...	...	97	...	1	9
											7 (b)	90	159	2·92														
											1 (c)	6	5	0·57														
											6 (d)	...	...	3·52														
Munshi Faizuddin Ahmed	...	...	,,	...	Sibsagar sadr tahsil.		14	16	16	10	17 (a)	170	209	8·14	1,594	3·89	...	...	...	...	...	...	...	...	...	...	...	...
											3 (b)	57	63	1·55														

(a) Independent check-lines in cadastral area.

(b) Independent check-lines in extension survey area.

(c) Check-lines run over the lines of subordinate officers in cadastral area.

(d) Lines run in surveying waste grants.

APPENDIX D—*continued.*

Name of Sub-Deputy Collector.	District.	Subdivision or tahsil.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area of concealed cultivation discovered.	Area found wrongly classified.		
			Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		Total number of mandals or patwaris.	Number of mandals or patwaris		Total area (in acres) as returned by mauzadars.	Total area (in acres) as found on remeasurement.	Percentage of errors in mauzadars' papers.		*Basti* shown as		*Ryoti* shown as *faringati* (acres).
					Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Babu Radha Kanta Handiqui	Sibsagar ...	Namtidal tahsil ...	29	24	24	10	15 (*a*)	321	210	7·60	2,578	1·89	25	20	...	...	...	...	...	...	5	...	...	4
,, Hem Chandra Gosvami	Lakhimpur ...	Dibrugarh ...	...	29	...	...	10 (*a*)	...	...	2·08	2,122	0·62	...	...	46	...	...	...	...	...	...	...	...	...
,, Gopal Chandra Puri Bhuiyan	,, ...	,, ...	...	29	...	...	7 (*a*)	96	169	3·48	2,122	1·05	11	2,628	46	20	4	...	...	...	63	...	...	...
,, Ram Kumar Aditya	,, ...	,, ...	15	14	14	10	18 (*a*) 1 (*c*) 32 (*e*)	56 7 ...	138 12 ...	5·25 0·43 9·45	1,453	2·31	...	...	42	15	...	...	...	...	...	...	...	...
Ditto	,, ...	North Lakhimpur	3	20	20	2	3 (*a*)	23	40	0·91	2,436	0·24	5	...	13	13	2	...	...	...	...	...	...	...
Maulvi Abrar Hussain	,, ...	,, ...	42	20	15	12	32 (*a*) 4 (*c*) 46 (*e*)	274 33 ...	513 76 ...	10·91 1·44 4·34	2,436	2·87	1,252	951	13	5	3	125	135	7·60	1	...	5	102
Babu Gopal Chandra Puri Bhuiyan ...	,, ...	Dibrugarh tahsil...	15	4	...	...	...	...	...	...	...	...	...	...	4	1	...	...	...	...	...	...	...	...

(*a*) Independent check-lines in cadastral area.

(*c*) Check-lines run over the lines of subordinate officers in cadastral area.

(*e*) Lines run in testing the demarcation of special estates.

APPENDIX E.

Work Statement of Supervisor Kanungos and Surveyors for the year 1899-1900.

Name of supervisor kanungo or surveyor.	Circle.	District.	Subdivision.	Area cadastrally surveyed.												
				Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *k-tans*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Binod Behari Chaudhuri ...	Hailakandi ...	Cachar ...	Hailakandi ...	61	15	...	15	1(*a*)	2	5	0·78	...	...	5,971	5,296	
Dinanath Ghosh ...	Saraspur ...	,, ...	,, ...	27	14	...	14	66(*a*)	86	80	3·76	...	...	1,511	2,508	
Ramdayal Chakravarti ...	Chatlahaor ...	,, ...	Sadr ...	32	10	...	4	9(*a*)	8	2	1·28	...	...	663	2,983	
Gopi Charan De ...	Katigora ...	,, ...	,, ...	22	16	3	3	5(*a*)	24	40	1·45	...	...	217	280	
Shama Charan Guha ...	Udharband ...	,, ...	,, ...	39	12	5	5	7(*a*)	10	10	1·37	...	...	369	562	
Sambhuram Das ...	Barakoar ...	,, ...	,, ...	12	8	...	3	...	...	...	...	...	...	966	956	
Jogesh Chandra Mitra ...	Sonapur ...	,, ...	,, ...	12	11	...	6	39 *a*)	9	34	5·68	...	...	853	1,467	
Kamini Kumar De ...	Lakhipur ...	,, ...	,, ...	...	11	...	...	...	...	...	...	...	...	...	...	
Sarat Chandra Sarma ...	,, ...	,, ...	,, ...	...	11	...	...	...	...	...	...	...	...	...	...	
Hari Mohan Das ...	Kanairghat ...	Sylhet ...	North Sylhet (Jaintia).	180	16	16	16	15(*a*)	97	158	5·65	124	29·08	18,970	25,094	

(*a*) Independent check-lines in cadastral area.

APPENDIX E—*continued.*

Name of supervisor kanungo or surveyor.	Circle.	District.	Subdivision.	Area cadastrally surveyed.												Remarks.
				Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Sarat Chandra Sarma ...	Jaintiapur ...	Sylhet ...	North Sylhet (Jaintia).	97	10	10	10	21 (*a*)	177	170	8·27	513	10·31	3,725	10,212	
Jajneswar Datta ...	„ ...	„ ...	„ ...	28		9	...	...	...	...	...	...	...	...	...	
Abdus Sabur ...	Haripur ...	„ ...	„ ...	127	14	14	14	43 (*a*)	216	554	13·12	399	21·04	10,037	31,251	
Sasi Kumar Kar ...	Gowainghat ...	„ ...	„ ...	40	12	12	12	3 (*a*)	5	3	1·71	288	12·69	212	176	
Jajneswar Datta ...	„ ...	„ ...	„ ...	...		12	...	...	...	...	...			...	...	
Gauri Charan Das ...	„ ...	„ ...	„ ...	15		12	12	...	...	...	...			430	532	
Barada Kanta Ganguli ...	„ ...	„ ...	„ ...	50		12	12	9 (*a*)	33	113	4·00			614	835	
Rati Ram Das ...	Bijni and Sidli...	Goalpara ...	Dhubri ...	112	22	22	22	153 (*a*)	1,477	2,592	88·25	9,689	5·82	991	12,215	
Shibnath Deka ...	Barpeta ...	Kamrup ...	Barpeta ...	108	19	19	19	108 (*a*)	1,417	2,139	77·6	4,298	11·48	3,713	2,969	
Munshi Ellias Sheikh ...	Bajali ...	„ ...	„ ...	170	22	22	22	117 (*a*)	1,439	2,739	72·06	1,773	26·01	10,860	5,240	
Bhagirath Das ...	Roha ...	„ ...	„ ...	87	22	22	22	80 (*a*)	840	1,654	40·93	5,442	11·39	2,842	3,754	
								31 (*b*)	299	657	13·13			...	...	
Sita Ram Das ...	„ ...	„ ...	„ ...	50				80 (*a*)	924	2,023	42·79			933	2,491	

Shib Ram Das ...	Beltola ...	„ ...	Gauhati ...	108	13	13	13	37(a)	494	767	17·55	1,051	10·70	4,618	3,178
Mantanram Das ...	Chhaigaon ...	„ ...	„ ...	62	25	25	23	56(a)	724	1,000	27·44	2,534	6·93	4,052	1,860
Naomal Das ...	Boko ...	„ ...	„ ...	36	17	17	17	34(a)	335	399	17·31	2,118	6·84	1,556	1,813
								10(b)	119	375	5·34				
								8(c)	113	165	4·24				
Tita Ram Gagai ...	Palasbari ...	„ ...	„ ...	91	22	22	22	48(a)	858	1,012	30·00	2,418	7·94	8,897	17,848
								4(c)	89	130	2·57				
Bati Ram Das ...	Patidarrang ...	„ ...	„ ...	92	20	20	20	33(a)	368	648	14·00	1,334	7·47	9,593	5,576
Purnananda Das ...	„ ...	„ ...	„ ...	5		...	3	2(a)	19	22	0·64			175	1,080
Konnath Deka ...	„ ...	„ ...	„ ...	6		...	2	3(a)	18	24	0·93			312	2,466
Ditto ...	Rangiya ...	„ ...	„ ...	33	26	26	26	13(a)	172	199	5·70	2,570	4·95	2,835	1,611
Laghanuram Das ...	„ ...	„ ...	„ ...	68		26	25	38(a)	321	427	14·13			2,450	963
Ramrath Datta ...	Hajo ...	„ ...	„ ...	40	21	21	19	35(a)	594	916	19·63	2,002	8·07	3,800	533
Santi Ram Dass ...	„ ...	„ ...	„ ...	88		21	21	22(a)	181	301	5·62			3,866	980
Joy Ram Deka ...	Barkhetri ...	„ ...	„ ...	54	17	17	17	38(a)	510	827	19·10	1,032	18·37	1,337	639
Manjur Ram ...	„ ...	„ ...	„ ...	10		17	17	23(a)	248	495	9·36			1,863	661
Jagat Ram Das ...	„ ...	„ ...	„ ...	15		5	5	2(a)	20	25	1·17			439	238
Rangdeb Sarma ...	Barama ...	„ ...	„ ...	34	18	18	18	20(a)	171	179	8·05	2,730	5·40	2,910	1,748
Ramrath Datta ...	„ ...	„ ...	„ ...	51		18	18	31(a)	377	482	15·01			2,261	2,521
Santiram Das ...	Nalbari ...	„ ...	„ ...	6	19	19	14	...	...	...	...	441	1·81	2,160	1,075
Bathuram Das ...	„ ...	„ ...	„ ...	1		19	1	...	...	...	...			157	67
Nar Nath ...	„ ...	„ ...	„ ...	29		19	19	3(a)	22	47	1·25			5,804	3,652
Purnanda Das ...	„ ...	„ ...	„ ...	13		1	6	...	...	...	...			567	1,183
Jagat Ram Das ...	Tambulpur ...	„ ...	„ ...	45	20	20	18	31(a)	217	304	14·20	1,457	13·91	753	1,234
Joy Ram Deka ...	„ ...	„ ...	„ ...	63		20	20	34(a)	248	435	17·47			4,233	1,348

(a) Independent check-lines in cadastral area. | (b) Independent check-lines in extension survey area.
(c) Check-lines run with superior officers in cadastral area.

APPENDIX E—*continued.*

Name of supervisor kanungo or surveyor.	Circle.	District.	Subdivision.	Area cadastrally surveyed.												Remarks.
				Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Chandra Kanta Sarkar ...	Patharughat ...	Darrang ...	Mangaldai ...	129	20	20	20	109(*a*)	1,263	1,942	49·00	2,564	12·23	3,470	1,914	
Kalamani Das	Mangaldai ...	„ ...	„ ...	117	22	22	22	102(*a*)	935	1,428	37·79	1,852	20·39	3,673	8,321	
								68(*b*)	211	99	21·24					
Rammal Das	Kalaigaon ...	„ ...	„ ...	161	24	24	24	73(*a*)	436	784	31·66	1,667	12·17	4,100	2,793	
								8(*d*)	62	120	2·71					
Jagannath Deka	Bengbari ...	„ ...	„ ...	127	16	16	16	33(*a*)	892	820	13·03	1,710	11·43	6,909	14,513	
								8(*b*)	130	150	3·62					
Mani Ram Keot	„ ...	„ ...	„ ...	40		...	...	29(*a*)	314	386	13·90					
								14(*d*)	216	257	7·23					
Ganga Ram Das	Eastern ...	„ ...	Tezpur ...	82	14	14	14	80(*a*)	843	1,367	35·61	2,168	10·51	6,012	6,180	
								1(*c*)	31	23	0·74					
Manu Ram Talukdar ...	Western ...	„ ...	„ ...	88	20	20	20	53(*a*)	568	1,007	30·04	2,421	11·20	4,672	4,544	
								16(*b*)	223	429	12·51					

Molan Chandra Borah ...	...	Silghat ...	Nowgong ...	Nowgong ...	120	22	22	22	135(*a*)	923	1,928	40·68	3,082	8·45	6,712	2,402
Pua Ram Mahanta ...	...	Town ...	„ ...	„ ...	105	32	32	32	84(*a*)	954	1,822	44·77	4,743	6·04	10,513	6,739
Tara Nath Borah ...	...	Doboka ...	„ ...	„ ...	157	17	17	17	89(*a*)	1,023	1,423	42·21	2,275	11·90	22,686	10,958
Gazendra Narayan Das	...	Mayang ...	„ ...	„ ...	87	11	11	11	52(*a*)	511	718	24·83	1,426	11·14	10,100	4,994
Mina Ram Das	...	Roha ...	„ ...	„ ...	216	22	22	22	108(*a*)	1,150	1,911	48·36	3,087	10·03	5,986	4,710
Gobinda Ram Datta	...	Dhing ...	„ ...	„ ...	100	19	19	19	122(*a*)	1,404	2,543	70·73	5,626	8·04	7,103	9,900
Surath Chandra Borah	...	Gerua ...	„ ..	„ ...	127	17	17	17	124(*a*)	1,399	2,672	77·43	4,307	11·50	2,633	1,930
Jiu Ram Das ...	...	Ghugua ...	„ ...	„ ...	132	21	21	21	132(*a*)	1,561	2,616	72·11	5,991	7·70	4,726	2,301
Durga Ram Datta ...	...	Northern ...	Sibsagar ...	Golaghat ...	59	25	...	14	25(*a*)	213	281	9·32	2,857	5·85	1,782	1,115
									2(*b*)	21	22	1·30				
Lalit Ram Chaudhuri ...	...	„ ...	„ ...	„ ...			...	21	23(*a*)	206	512	11·26			585	1,700
									10(*b*)	86	163	4·22				
Bhakat Ram Datta ...	...	Southern ...	„ ...	„ ...	93	21	21	21	24(*a*)	275	260	13·45	1,776	6·87	3,701	1,954
									18(*b*)	103	175	5·58				
									23(*e*)	...	...	7·68				
Kati Ram Das ...	...	Eastern ...	„ ...	Jorhat ...	54	19	19	19	51(*a*)	410	916	20·16	2,430	6·84	816	1,093
									14(*b*)	146	190	5·84				
Mahi Ram Das (Senior)	....	North-Western	„ ...	„ ...	82	23	23	23	25(*a*	268	584	16·42	2,080	8·21	3,675	2,505
									27(*b*)	211	422	10·28				
Mahim Ram Das (Junior)	...	South-Western	„	„	50	17	17	17	80(*a*)	523	1,132	34·37	1,152	19·09	1,398	1,106
Shib Nath Sarma ...	...	Majuli	„	„ ...	112	19	19	19	201(*a*)	1,909	3,972	81·92	4,310	12·17	740	607
									1(*c*)	13	16	0·52				
Lalit Ram Chaudhuri	...	Western ...	„	Sadr ...	57	24	...	20	23(*a*)	225	460	9·92	2,578	7·80	992	993
Durga Ram Datta ...	...	„ ...	„	„	130		24	24	47(*a*)	460	872	21·74			2,457	3,135

(*a*) Independent check-lines in cadastral area.
(*b*) „ „ „ extension survey area.
(*c*) Check lines run with superior officers in cadastral area.
(*d*) „ „ „ „ extension survey area.
(*e*) Lines run in erecting kanungo's *dhips*.

APPENDIX E—*concluded.*

Name of supervisor kanungo or surveyor.	Circle.	District.	Subdivision.	Area cadastrally surveyed.												Remarks.
				Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwarsi		Testing by check-lines.						Testing without check-lines.		
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katans*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Shib Ram Bora	Eastern ...	Sibsagar ...	Sadr ...	104	25	25	18	36(*a*)	357	638	15·76	3,122	3·85	4,378	12,848	
Manpur Gagai	,, ...	,, ...	,, ...	7		...	4	7(*a*)	52	84	3·04			43	175	
								10(*c*)	...	...	5·08					
Gobinda Nath Ray	Central ...	,, ...	,, ...	67	21	21	21	73(*a*)	494	489	27·57	2,391	10·89	929	649	
								2(*b*)	20	36	1·04			237	144	
Malbhog Gagai	,, ...	,, ...	,, ...	10		...	18	8(*a*)	91	121	3·94					
								11(*b*)	183	234	8·16					
Moheswar Das	Dibrugarh ...	Lakhimpur ...	Dibrugarh ...	85	15	15	15	62(*a*)	581	725	22·41	670	21·40	750	1,250	
Lakshmi Kanta Das ...	Chabua ...	,, ...	,, ...	49	14	14	14	51(*a*)	449	945	20·48	1,454	10·10	1,562	1,647	
								7(*b*)	56	142	2·47					
Bhabi Ram Das	North-Lakhimpur.	,, ...	North Lakhimpur.	101	20	20	20	110(*a*)	883	1,628	35·80	2,436	9·40	2,809	1,326	
Samudra Narayan Das ...	...	Kamrup ...	Gauhati ,,	60	211	...	30	6(*a*)	81	58	3·38	...	...	4,109	2,394	
Muzaffar Ali	Did no testing whatever.															
Chandreswar Changkakati (offg.)																

(*a*) Independent check-lines in cadastral area. | (*b*) Independent check-lines in extension survey area.
(*c*) Lines run in erecting kanungo's *dhips*.

APPENDIX F.

Work Statement of Tahsildars for the year 1899-1900.

Name of Tahsildar.	Name of tahsil.	District.	Subdivision.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area of concealed cultivation discovered, in acres.	Area, in acres, found wrongly classified.		
				Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris		Testing by check-lines.						Testing without check-lines.		Total number of mandals or patwaris.	Number of mandals or patwaris		Total area as returned by mauzadars, in acres.	Total area as found on remeasurement, in acres.	Percentage of errors in mauzadars' papers.		*Basti* shown as	
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katani*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Rupit* shown as *faringati* (acres).
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Ratan Ali Sarkar	Sadr (Jaintia) ...	Sylhet ...	North Sylhét ...	35	32	5	2	2	12	22	1·35	1,113	0·77	109	9,021	...	...	...	...	...	...	...	...	...	...
Hara Narayan Sen	Kanairghat ...	,, ...	,, ...	1	16	16	1	2	7	10	0·75	210	2·28	135	53	...	...	...	...	...	...	...	...	...	...
Keshab Chandra Singha	Roha ...	Kamrup ...	Barpeta ...	5	13	14	4	12	178	313	7·16	3,804	1·20	29	1,589	1	1	1	44	43	2·27	...	...	...	...
Ratna Kanta Barua	Bajali ...	,, ...	,, ...	17	20	20	19	15	204	306	9·10	1,392	4·19	430	358	...	...	...	...	...	...	...	...	...	...
Kaliram Chaudhuri	Chhaigaon ...	,, ...	Gauhati ...	3	2	...	2	10	180	193	4·03	978	2·63	69	123	...	...	...	...	...	...	...	...	...	...
Shyamlal Chaudhuri	Palasbari ...	,, ...	,, ...	23	22	7	12	13	222	273	4·54	2,418	1·73	1,562	1,093	1	...	1	89	91	2·23	4	...	5	...
Banga Chandra Chaudhuri	Patidarrang ...	,, ...	,, ...	24	20	20	11	9	60	191	3·50	1,333	1·69	780	751	...	...	...	...	...	...	18	...	...	...
Uday Chandra Barua	Rangiya ...	,, ...	,, ...	18	20	9	11	22	309	263	10·12	2,570	2·52	378	848	...	...	...	...	...	...	...	...	...	...
Bangshidhar Sarma Barua	Nalbari ...	,, ...	,, ...	6	19	19	8	...	...	...	...	441	...	450	107	...	...	...	...	...	...	...	...	...	5
Gangaram Das	Barama ...	,, ...	,, ...	14	18	18	11	14	108	133	5·57	2,001	1·79	519	2,730	...	...	...	...	...	...	12	...	12	65
Joyram Deka	Tambulpur ...	,, ...	,, ...	29	20	20	12	28	381	485	15·24	1,457	6·77	...	472	2	2	2	22	28	27·27	13	...	...	...
Ghanakanta Chaliha	Kalaigaon ...	Darrang ...	Mangaldai ...	11	24	24	10	26	148	294	10·54	1,667	3·93	345	297	...	...	...	...	...	...	...	...	...	...
Rabi Chandra Sarma	Tezpur ...	,, ...	Tezpur ...	25	10	10	8	16	108	298	9·14	1,455	4·02	396	879	5	5	4	501	511	1·90	1	...	...	...
Ganga Nath Sarma	Chutia ...	,, ...	,, ...	5	12	12	3	5	71	51	2·68	1,716	1·01	...	...	4	4	...	...	...	...	...	...	...	...
Santiram Hazarika	Nowgong ...	Nowgong ...	Nowgong ...	...	...	...	...	...	...	...	...	...	...	43	15	...	...	...	...	...	...	...	...	...	...
Chandra Kanta Barua	Samaguri ...	,, ...	,, ...	4	14	2	...	...	...	...	...	...	...	45	16	...	...	...	...	...	...	...	...	...	...
Gunabas Goswami	Roha ...	,, ...	,, ...	13	22	13	9	13	307	624	7·00	3,087	1·45	180	415	...	1	1	...	...	...	...	...	...	...
Bisturam Barua	Jorhat ...	Sibsagar ...	Jorhat ...	8	17	13	8	10	97	160	3·81	831	2·93	...	...	...	...	...	...	...	...	...	...	...	...
Daudadhar Barua	Golaghat ...	,, ...	Golaghat ...	12	14	6	11	22	128	78	5·56	1,114	3·19	149	153	...	...	...	...	...	...	...	...	...	...
Guru Prasad Kakati	Athgaon ...	,, ...	,, ...	4	12	12	2	6	60	108	2·82	1,044	1·73	...	...	...	...	...	...	...	...	...	...	...	...
Total	.....	.....	.....	257	332	240	144	225	2,580	3,802	102·71	28,631	2·29	5,425	18,920	13	12	9	656	673	2·59	48	...	17	70

APPENDIX G.

Work Statement of Mauzadars and Tahsil Muharrirs for the year 1899-1900.

District.	Subdivision.	Total number of mauzadars and muharirs who did any testing.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area, in acres, of concealed cultivation discovered.	Area found wrongly classified.			Remarks.
			Number of villages tested.	Total number of mandals.	Number of mandals		Testing by check-lines.						Testing without check-lines.		Total number of mandals.	Number of mandals		Total area, in acres, as returned by mauzadars.	Total area, in acres, found on remeasurement.	Percentage of errors in mauzadars' papers.		*Bauli* shown as			
					Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *katas*.	Number of offsets.	Total length of lines, in miles.	Area of fluctuating cultivation in jurisdiction, in acres.	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested, in acres.		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Rupit* shown as *faringati* (acres).	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Goalpara	Dhubri	4	72	22	18	18	19	133	322	3·65	3,379	0·80	1,070	1,870	2	2	1	890	895	0·56	...	...	...	...	
Kamrup	Barpeta	6	46	25	21	23	60	740	1,346	32·98	6,316	3·34	871	2,928	3	3	3	573	561	2·09	...	...	...	3	
,, ...	Gauhati	1	3	4	4	3	5	60	79	2·03	564	2·48	40	...	1	1	...	65	65	...	30	...	...	...	
Darrang	Mangaldai	8	49	21	19	21	61	430	800	25·61	5,962	2·75	1,383	1,357	9	9	9	483	487	0·83	...	...	...	...	
,, ...	Tezpur	3	12	16	12	9	14	122	204	8·47	1,417	3·82	1,345	669	14	11	7	1,226	1,300	6·03	46	...	...	...	
Nowgong	Nowgong	11	61	63	49	31	58	790	1,108	34·46	6,101	3·61	2,365	1,532	6	6	6	68	85	34·00	15	20	17	41	
Sibsagar	Sadr	3	7	18	7	6	12	151	213	5·40	1,912	1·81	133	225	...	...	...	...	...	...	...	...	...	...	
,, ...	Jorhat	8	28	41	37	15	18	178	295	7·06	5,940	0·76	732	905	5	3	...	4	4	...	...	...	...	...	
,, ...	Golaghat	3	11	7	5	5	3	20	42	1·06	648	1·04	330	233	6	6	6	386	386	...	1	...	...	...	
Lakhimpur	Dibrugarh	4	14	11	11	7	5	45	93	2·30	332	4·50	884	956	22	22	14	4,065	4,083	0·44	23	...	7	43	
,, ...	North Lakhimpur	1	2	20	2	2	2	12	29	0·55	489	0·72	9	6	...	...	...	...	...	...	...	...	...	...	
Total	.....	52	305	248	185	140	266	2,681	4,531	123·57	33,068	2·36	9,162	10,681	68	63	46	7,760	7,866	1·36	115	20	24	87	

APPENDIX H.

Statement showing the condition of Survey Marks on the 30th June 1899.

Subdivision.	Classification.	Total number (columns 6+7+8).	Total number found in good order by mandals and patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order on 30th June 1899.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Karimganj ...	(*a*) Trijunction prisms	100	100	...	...	100	...
	(*b*) Traverse stations shown by mounds and *simul* boughs	1,964	1,387	262	315	1,649	...
	(*d*) Prisms on boundaries of grants, etc....	124	124	...	...	124	...
	(*e*) Brick pillars of grants, etc. ...	152	40	...	112	40	...
	(*f*) Country stones ditto	97	97	...	...	97	...
	(*g*) Pipes ditto	52	36	...	16	36	...
	(*h*) Mounds ditto	2,215	1,889	62	253	1,951	11
	Total Karimganj	4,704	3,673	324	696	3,997	11
North Sylhet (Jaintia).	(*a*) Trijunction prisms ...	598	546	3	2	549	47
	(*b*) Traverse stations shown by mounds and *simul* boughs	10,159	8,056	53	573	8,109	1,477
	(*c*) Kanungos' mounds, including jungle mounds	27	27	...	...	27	...
	(*d*) Prisms on boundaries of grants, etc....	87	69	...	2	69	16
	(*e*) Concrete blocks ditto	147	128	...	11	128	8
	(*f*) Country stones ditto	1,360	1,253	3	41	1,256	63
	(*g*) Mounds ditto	...	...	...	...	...	...
	Total Jaintia	12,378	10,079	59	629	10,138	1,611
Goalpara ...	(*a*) Trijunction prisms	584	567	...	...	567	17
	(*b*) Traverse stations shown by mounds and *simul* boughs	3,844	1,895	1,770	174	3,665	5
	(*c*) Kanungos' mounds, including jungle mounds	120	120	...	...	120	...
	(*d*) Prisms on boundaries of grants, etc....	...	...	...	...	...	...
	(*e*) Concrete blocks ditto	...	...	...	...	...	...
	(*f*) Country stones ditto	...	...	...	...	...	...
	(*g*) Mounds ditto	...	...	...	...	...	...
	Total Goalpara	4,548	2,582	1,770	174	4,352	22

APPENDIX H—*continued.*

Subdivision.	Classification.	Total number (columns 6+7+8).	Total number found in good order by mandals and patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order on 30th June 1899.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Barpeta ...	(*a*) Trijunction prisms	983	759	124	8	883	92
	(*b*) Traverse stations shown by mounds and *simul* boughs	5,655	1,034	2,459	883	3,493	1,279
	(*c*) Kanungos' mounds, including jungle mounds	1,352	547	609	75	1,156	121
	(*d*) Prisms on boundaries of grants, etc. ..	264	225	11	1	236	27
	(*e*) Concrete blocks ditto	886	799	40	1	839	46
	(*f*) Country stones ditto	1,545	1,009	62	1	1,071	473
	(*g*) Mounds ditto	206	162	6	35	168	3
	Total Barpeta	10,891	4,535	3,311	1,004	7,846	2,041
Gauhati ...	(*a*) Trijunction prisms	2,964	2,768	35	59	2,803	102
	(*b*) Traverse stations shown by mounds and *simul* boughs	5,031	1,883	1,726	828	3,609	594
	(*c*) Kanungos' mounds, including jungle mounds	5,430	2,194	1,687	966	3,881	583
	(*d*) Prisms on boundaries of grants, etc. ...	5,326	4,693	3	280	4,696	350
	(*e*) Concrete blocks ditto	6,782	6,158	15	282	6,173	327
	(*f*) Country stones ditto	7,064	6,700	122	144	6,822	98
	(*g*) Mounds ditto	1,096	809	136	108	945	43
	Total Gauhati	33,693	25,205	3,724	2,667	28,929	2,097
Mangaldai ...	(*a*) Trijunction prisms	1,536	1,521	...	...	1,521	15
	(*b*) Traverse stations shown by mounds and *simul* boughs	6,828	3,339	2,867	419	6,206	203
	(*c*) Kanungos' mounds, including jungle mounds	182	113	44	25	157	...
	(*d*) Prisms on boundaries of grants, etc...	710	708	...	...	708	2
	(*e*) Concrete blocks ditto ...	1,399	1,396	...	...	1,396	3
	(*f*) Country stones ditto ...	487	487	...	...	487	...
	(*g*) Mounds ditto ...	132	89	...	43	89	...
	(*h*) Brick pillars	73	73	...	...	73	...
	Total Mangaldai	11,347	7,726	2,911	487	10,637	223
Tezpur ...	(*a*) Trinjunction prisms	427	355	60	2	415	10
	(*b*) Traverse stations shown by mounds and *simul* boughs	2,887	1,315	1,226	284	2,541	62
	(*c*) Kanungos' mounds, including jungle mounds	124	40	62	22	102	...
	(*d*) Prisms on boundaries of grants, etc. ...	35	35	...	...	35	...
	(*e*) Concrete blocks ditto ...	1,231	1,200	4	27	1,204	...
	(*f*) Country stones ditto ...	348	339	3	6	342	...
	(*g*) Mounds ditto ...	6	2	3	1	5	...
	Total Tezpur	5,058	3,286	1,358	342	2,644	72

APPENDIX H—*continued.*

Subdivision.	Classification.	Total number (columns 6+7+8).	Total number found in good order by mandals and patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order on 30th June 1899.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Nowgong ...	(*a*) Trijunction prisms	2,243	2,160	62	16	2,222	5
	(*b*) Traverse stations shown by mounds and *simul* boughs	16,050	9,685	4,595	1,511	14,280	259
	(*c*) Kanungos' mounds, including jungle mounds	506	313	139	42	452	12
	(*d*) Prisms on boundaries of grants, etc....	529	527	...	2	527	...
	(*e*) Concrete blocks ditto ...	304	304	...	...	304	...
	(*f*) Country stones ditto ...	255	255	...	...	255	...
	(*g*) Mounds ditto ...	749	571	15	163	586	...
	Total Nowgong	20,636	13,815	4,811	1,734	18,626	276
Golaghat ...	(*a*) Trijunction prisms	558	540	2	6	542	10
	(*b*) Traverse stations shown by mounds and *simul* boughs	5,834	3,265	1,397	871	4,662	301
	(*c*) Kanungos' mounds, including jungle mounds	278	168	64	46	232	...
	(*d*) Prisms on boundaries of grants, etc....	224	224	...	...	224	...
	(*e*) Concrete blocks ditto ...	1,032	1,032	...	...	1,032	...
	(*f*) Country stones ditto ...	78	78	...	...	78	...
	(*g*) Mounds ditto ...	92	92	...	...	92	...
	(*h*) Concrete block of town theodolite stations	14	14	...	...	14	...
	Total Golaghat	8,110	5,413	1,463	923	6,876	311
Jorhat ...	(*a*) Trijunction prisms	961	954	...	...	954	7
	(*b*) Traverse stations shown by mounds and *simul* boughs	9,830	4,979	3,374	770	8,353	707
	(*c*) Kanungos' mounds, including jungle mounds	384	242	116	21	358	5
	(*d*) Prisms on boundaries of grants, etc....	827	827	...	...	827	...
	(*e*) Concrete blocks ditto ...	2,145	2,115	...	...	2,115	30
	(*f*) Country stones ditto ...	258	258	...	...	258	...
	(*g*) Mounds ditto ...	27	27	...	...	27	...
	Total Jorhat	14,432	9,402	3,490	791	12,892	749
Sibsagar sadr ...	(*a*) Trijunction prisms	1,023	1,008	...	1	1,008	14
	(*b*) Traverse stations shown by mounds and *simul* boughs	10,778	4,959	2,139	1,668	7,098	2,012
	(*c*) Kanungos' mounds, including jungle mounds	188	146	18	6	164	18
	(*d*) Prisms on boundaries of grants, etc....	856	856	...	...	856	...
	(*e*) Concrete blocks ditto ...	1,085	1,085	...	...	1,085	...
	(*f*) Country stones ditto ...	50	50	...	...	50	...
	(*g*) Mounds ditto ...	56	56	...	...	56	...
	Total Sibsagar sadr	14,036	8,160	2,157	1,675	10,317	2,044

APPENDIX H—*concluded.*

Subdivision.	Classification.	Total number (columns 6+7+8).	Total number found in good order by mandals and patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order on 30th June 1899.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
North Lakhimpur	(*a*) Trijunction prisms	198	193	5	...	198	...
	(*b*) Traverse stations shown by mounds and *simul* boughs	1,612	1,025	499	40	1,572	...
	(*c*) Kanungos' mounds, including jungle mounds	81	35	40	6	75	...
	(*d*) Prisms on boundaries of grants, etc. ...	4	4	...	...	4	...
	(*e*) Concrete blocks ditto ...	239	239	...	...	239	...
	(*f*) Country stones ditto ...	50	35	10	5	45	...
	(*g*) Mounds ditto ...	150	115	30	5	145	...
	Total North Lakhimpur	2,334	1,696	582	56	2,278	...
Dibrugarh ...	(*a*) Trijunction prisms	402	312	55	34	367	1
	(*b*) Traverse stations shown by mounds and *simul* boughs	2,950	1,198	1,139	582	2,337	31
	(*c*) Kanungos' mounds, including jungle mounds	530	369	152	9	521	...
	(*d*) Prisms on boundaries of grants, etc. ...	332	332	...	...	332	...
	(*e*) Concrete blocks ditto ...	859	859	...	...	859	...
	(*f*) Country stones ditto ...	...	...	...	...	...	...
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total Dibrugarh	5,073	3,070	1,346	625	4,416	32
Total ...	(*a*) Trijunction prisms	12,577	11,783	346	128	12,129	320
	(*b*) Traverse stations shown by mounds and *simul* boughs	83,422	44,070	23,504	8,918	67,574	6,930
	(*c*) Kanungos' mounds, including jungle mounds	9,202	4,314	2,931	1,218	7,245	739
	(*d*) Prisms on boundaries of grants, etc....	10,514	9,789	18	312	9,807	395
	(*e*) Concrete blocks ditto ...	16,261	15,355	59	433	15,414	414
	(*f*) Country stones ditto ...	10,232	9,308	197	156	9,505	571
	(*g*) Mounds ditto ...	4,729	3,812	252	608	4,064	57
	(*h*) Brick pillars	73	73	...	...	73	...
	(*i*) Concrete blocks of town theodolite stations	14	14	...	...	14	...
	Grand total	147,024	98,518	27,307	11,773	125,825	9,426

APPENDIX I.

Statement showing Advances and Recoveries on account of Cadastral Survey operations during 1899-1900.

District.	Classification of advances.	Outstanding on 31st March 1899.	Advances made during 1899-1900.	Total for recovery up to 31st March 1900.	Recovered during the year 1899-1900.	Balance outstanding on 31st March 1900.
1	2	3	4	5	6	7
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Cachar.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the Professional Party.	44,654 9 5*	400 0 0	45,054 9 5	244 11 1	44,809 14 4
	(3) Advances for demarcation of grants and permanently-settled *la-khiraj* and *nisf-khiraj* estates.	31,767 5 11*	331 11 6	32,099 1 5		32,099 1 5
	Total	76,421 15 4	731 11 6	77,153 10 10	244 11 1	76,908 15 9
Sylhet.	Pratabgarh—					
	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the Professional Party.	100 0 0	...	100 0 0	...	100 0 0
	(3) Advances for demarcation of grants and permanently-settled *la-khiraj* and *nisf-khiraj* estates—					
	(*a*) Country stones ...	1,882 9 0	...	1,882 9 0	2,936 8 7	678 9 2
	(*b*) Prisms	1,152 10 9	...	1,152 10 9		
	(*c*) Pay of demarcation establishment.	579 14 0	...	579 14 0		
	Jaintia—					
	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the Professional Party.	287 10 5*	...	287 10 5	8 9 9	279 0 8
	Ilam—					
	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the Professional Party.	14,587 13 2	3,900 0 0	18,487 13 2	...	18,487 13 2
	(3) Advances for demarcation of grants and permanently-settled *la-khiraj* and *nisf-khiraj* estates—					
	Stone prisms	2,307 11 0	...	2,307 11 0	...	2,307 11 0
	Langai and Singla disforested areas—					
	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the Professional Party.	...	2,700 0 0	2,700 0 0	...	2,700 0 0
	Total	20,898 4 4	6,600 0 0	27,498 4 4	2,945 2 4	24,553 2 0
Goalpara.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by local agency.	3,919 3 0	...	3,919 3 0	3,919 3 0†	...
	Total carried over ...	1,01,239 6 8	7,331 11 6	1,08,571 2 2	7,109 0 5	1,01,462 1 9

* Revised figures. | † Written off.

APPENDIX I—*continued.*

District.	Classification of advances.	Outstanding on 31st March 1899.	Advances made during 1899-1900.	Total for recovery up to 31st March 1900.	Recovered during the year 1899-1900.	Balance outstanding on 31st March 1900.
1	2	3	4	5	6	7
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
	Total brought forward ...	1,01,239 6 8	7,331 11 6	1,08,571 2 2	7,109 0 5	1,01,462 1 9
Kamrup.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the Professional Party.	352 9 6*	...	352 9 6	...	352 9 6
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency.	5,539 7 4*	150 5 0	5,689 12 4	...	5,689 12 4
	(3) Advances for demarcation of grants and permanently-settled *la-khiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	12,657 14 9	...	12,657 14 9	7,399 9 3	5,258 5 6
	(*b*) Prisms					
	(*c*) Pay of demarcation establishment.					
	Total	18,549 15 7	150 5 0	18,700 4 7	7,399 9 3	11,300 11 4
Darrang.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the Professional Party.	397 8 2*	...	397 8 2	140 1 11	257 6 3
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency.	1,103 6 6*	...	1,103 6 6	736 3 9	367 2 9
	(3) Advances for demarcation of grants and permanently-settled *la-khiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	6,503 8 8*	...	6,503 8 8	3,817 4 8	6,167 8 9
	(*b*) Prisms ...	2,381 12 0*	...	2,381 12 0		
	(*c*) Pay of demarcation establishment.	1,099 8 9*	...	1,099 8 9		
	Total	11,485 12 1	...	11,485 12 1	4,693 10 4	6,792 1 9
Nowgong.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the Professional Party.	586 6 6	...	586 6 6	482 9 9	103 12 9
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency.	1,111 6 0*	10 0 0	1,121 6 0	...	1,121 6 0
	(3) Advances for demarcation of grants and permanently-settled *la-khiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...	450 7 11				
	(*b*) Prisms ...	753 4 9	50 13 10	1,675 15 11	1,146 4 11	529 11 0
	(*c*) Pay of demarcation establishment.	421 5 5				
	Total	3,322 14 7	60 13 10	3,383 12 5	1,628 14 8	1,754 13 9
	Total carried over ...	1,34,598 0 11	7,542 14 4	1,42,140 15 3	20,831 2 8	1,21,309 12 7

* Revised figures.

APPENDIX I—*concluded.*

District.	Classification of advances.	Outstanding on 31st March 1899.	Advances made during 1899-1900.	Total for recovery up to 31st March 1900.	Recovered during 1899-1900.	Balance outstanding on 31st March 1900.
1	2	3	4	5	6	7
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
	Total brought forward ...	1,34,598 0 11	7,542 14 4	1,42,140 15 3	20,831 2 8	1,21,309 12 7
Sibsagar.	(1) Advances for demarcation recoverable from landholders in the area surveyed by the Professional Party	154 6 11	11 0 0	165 6 11	65 6 6	100 0 5
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency ...	2,303 7 2	78 14 0	2,382 5 2	...	2,382 5 2
	(3) Advances for demarcation of grants and permanently-settled *la-khiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...					
	(*b*) Prisms	20,634 1 9	...	20,634 1 9	17,268 0 3	3,366 1 6
	(*c*) Pay of demarcation establishment ...					
	Total	23,091 15 10	89 14 0	23,181 13 10	17,333 6 9	5,848 7 1
Lakhimpur.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the Professional Party	1 1 9*	...	1 1 9	...	1 1 9
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency ...	255 8 0	263 10 0	519 2 0	3 10 0	515 8 6
	(3) Advances for demarcation of grants and permanently-settled *la-khiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...					
	(*b*) Prisms	629 13 7	...	629 13 7	518 4 5	111 9 2
	(*c*) Pay of demarcation establishment ...					
	Total	886 7 4	263 10 0	1,150 1 4	521 14 5	628 2 11
	Grand total	1,58,576 8 1	7,896 6 4	1,66,472 14 5	38,686 7 10	1,27,786 6 7
Total.	(1) Advances for demarcation recoverable from landholders in the areas surveyed by the Professional Party	61,122 1 10	7,011 0 0	68,133 1 10	941 7 0	67,191 10 10
	(2) Advances for demarcation recoverable from landholders in the areas surveyed by local agency ...	14,232 6 0	502 13 0	14,735 3 0	4,659 0 9	10,076 2 3
	(3) Advances for demarcation of grants and permanently-settled *la-khiraj* and *nisf-khiraj* estates—					
	(*a*) Concrete blocks ...					
	(*b*) Prisms	83,222 0 3	382 9 4	83,604 9 7	33,086 0 1	50,518 9 6
	(*c*) Pay of demarcation establishment ...					
	Total	1,58,576 8 1*	7,896 6 4	1,66,472 14 5	38,686 7 10	1,27,786 6 7

* Revised figures.

APPENDIX J.

List of papers communicated to the Agricultural Ledger during 1899-1900.

Subject.	Description of papers.	
1	2	
Dioscorea (yam)	Descriptive note by	Captain H. M. Halliday, Deputy Commissioner, Garo Hills.
Ditto	Ditto	Krishna Chandra Deb, Nazir, Deputy Commissioner's office, Sylhet.
Ditto	Ditto	E. C. S. Baker, Esq., Subdivisional Officer, North Cachar.
Ditto	Ditto	Babu Benudhar Rajkhowa, Sub-Deputy Collector, Sibsagar.
Ditto	Ditto	Captain H. W. G. Cole, Officiating Deputy Commissioner, Darrang.

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(Rev.) No. 165—348—23-8-1900.

Resolution on the Report of the Department of Land Records and Agriculture, Assam, for 1899-1900.

Extract from the Proceedings of the Chief Commissioner of Assam in the General Department, No. 3326R., dated Shillong, the 12th September 1900.

Read—

The Annual Report of the Director of Land Records and Agriculture for 1899-1900.

RESOLUTION.

1. MR. Kershaw was in charge of the Department from 1st April 1899 until the 10th March 1900. Mr. Lees, by whom the present report is submitted, held charge from the 10th March until the close of the year. The office of Assistant to the Director was held by Mr. B. C. Basu throughout the year, with the exception of three months (19th May to 18th August 1899), during which Mr. M. N. Ghosh, Extra Assistant Commissioner, officiated.

2. Mr. Kershaw was in camp for 117 days and Mr. Lees for 21 days during the year, and were engaged in inspecting the Land Records staff of the various districts of the province and the Settlement offices at Maulvi Bazar and Silchar. Mr. Basu and Mr. Ghosh between them were on tour 202 days. Both officers were actively employed in mauza-book work. Mr. O'Donel, Superintendent of Provincial Surveys, displayed his usual energy in inspection work, and was on tour for 261 days during the year. Mr. O'Donel has, by his retirement from service, severed a connection with Assam extending over eight years. He has been most active in the inspection of the work of the Subordinate Land Records establishment, and to his careful supervision is largely due the general excellence of the present system. Mr. Cotton takes this opportunity to record his appreciation of these services, and his regret at the loss which the province will sustain by Mr. O'Donel's retirement.

A sufficient amount of touring was perfomed by Sub-Deputy Collectors, with the exception of the officers in charge of the Dibrugarh subdivision, Babus Hem Chandra Goswami and Gopal Chandra Puri Bhuiyan, who out of 54 and 160 days, during which they were in charge, were only on tour 7 and 20 days, respectively.

The Chief Commissioner regrets to notice that the touring done by supervisor kanungos is still insufficient. In Kamrup the prescribed amount was reached in only half the circles, and in Sibsagar only in one of the nine circles in the district. This laxity is due to absence of control on the part of Sub-Deputy Collectors, and though the work of most of these officers has earned the commendation of the Officiating Director, the Chief Commissioner has noted the names of Babus Benudhar Rajkhoa, Sarat Chandra Lahiri, and Lakshesvar Sarma in the Sibsagar district, Babu Mahendra Chandra De in Tezpur, and Babu Gopal Chandra Puri Bhuiyan in Dibrugarh who are reported to have been inactive in supervision.

3. One of the most unsatisfactory features in the year's working was the continued failure of Deputy Commissioners and Subdivisional Officers to supervise the work of mandals and patwaris—a duty the importance of which has of late years in successive Resolutions been impressed upon District Officers. During the year the papers of only 359 mandals were examined, against 406 in 1898-99, but of these, three officers —Captain Gurdon, Mr. Allen, and Mr. Strong, whose work in this direction is commendable—were responsible for 270. Mr. Reid inspected the papers of only 13, Mr. Donald of 11, and Mr. Clarke of 15 mandals, while Messrs. Barnes, Jackson, and Colquhoun entirely failed in this duty. It is the District and Subdivisional Officers of Sibsagar and Lakhimpur who have neglected this work.

4. The efficiency of the Land Records staff of the province is nevertheless creditable to the Department. Evidence of this is to be found in the results of the special enquiries made during the year in Barpeta, Kamrup sadr, and Mangaldai, which are summarized in paragraph 17 of the report. In Barpeta, in the cadastral area examined, only 19 *bighas* were found unassessed, and no cases of under-classification

were discovered. In the non-cadastral area, of 11,235 *bighas* which the enquiry embraced, 123 *bighas* were found unassessed and 595 *bighas* under-classified, but this area was more than counterbalanced by the numerous cases of over-measurement, which were discovered. In the absence of maps and under the rough system of measurement of fields by the measuring pole practised in non-cadastral tracts, small errors of under and over-measurement are unavoidable, but it is creditable to the Land Records staff that the enquiries made in the non-cadastral areas of the Barpeta subdivision, where supervision is peculiarly difficult, should have been attended with these results. In Mangaldai, out of a total area of 42,557 *bighas*, only 141 *bighas* (consisting entirely of extensions on the edge of old cultivation) were found unassessed and 179 *bighas* under-classified. In Kamrup 378 *bighas* were found unassessed and 160 *bighas* under-classified. One defect merits special mention. The correct up-keep of the record-of-rights is in *raiyatwari* areas of supreme importance, and though it appears that, with the exception of Gauhati, corrections are generally effected with fair accuracy and despatch in *jamabandis* kept at district and subdivisional headquarters, the enquiries made by the Officiating Director show that, except in Sylhet and Barpeta, the accuracy of the mofussil records is everywhere doubtful. The attention of District Officers and Sub-Deputy Collectors is directed to this defect, which is due to the failure of registrar kanungos to attend to the return of *parwanas* issued to tahsildars and mauzadars for the correction of the mofussil records. It is only by careful attention to details of this nature that with our present highly complex machinery of annual settlements any substantial increase in efficiency can be obtained.

5. Marked progress was made in the system of continuous enquiry into agricultural conditions and statistics inaugurated in 1898. The mauza-book has now been introduced into all the districts of the Assam Valley, which will come under resettlement, with the exception of Nowgong. Its operations now extend over more than 4,000 cadastral villages, and embrace an area of over 4,000 square miles. For practically the whole of this area, the village and mauza statements have been written up, *rupit* lands have been classified, and waterflow marked in over 2,000 villages, and particulars of over 200,000 sub-tenancies have been recorded. In addition, wholesale and retail prices have been registered, nearly 1,400 crop experiments were carried out, and detailed notes on the economic condition of over 200 villages were prepared during the year. This is a very creditable record of work, and the results of the enquiries now made, when complete, should go far towards simplifying the work of the officers entrusted with the work of re-assessing the Upper Assam Valley districts. The thanks of the Administration are due to Mr. Basu for the energy he has shown in the organisation of this work, and to the mandals of the Assam Valley generally, whose labours have been materially increased by the introduction of the system. The Chief Commissioner is glad to notice that Babu Sarat Chandra Lahiri was energetic in mauza-book work, having tested the classification of 82 villages, recorded economic notes for 85 villages, and tested over 10 per cent. of the sub-tenancies recorded in his subdivision. The weak point of this and of other work carried out under the immediate orders of the Director is the apparent apathy of District Officers. The Chief Commissioner is reluctant to believe that the silence of the Director indicates any real apathy on their part, but he would be glad if the extent of their co-operation were noticed more fully in future reports.

6. Potato cultivation on the Upper Shillong Experimental Farm was attended with success. In March 1900, over 2 acres were planted, and the crop gathered in July gave a yield of 316 maunds, or more than fourteen times the seed used. One English variety, 'Abundance,' gave a twenty-fold return, and as it is a hardy variety, will probably do well in the Khasi Hills. The average outturn per acre was 158 maunds, considerably more than the ordinary outturn in the Khasi and Jaintia Hills, which is stated to be 45 maunds for the first and 18 maunds for the second sowing. This large outturn was due to the use of oilcake and Bordeaux mixture.

Paragraph 29 of the report contains an interesting account of an attempt, which, the Chief Commissioner is glad to find, has been successful, made in Golaghat by Babu Debesvar Gossain, an Assamese gentleman, to grow sugarcane on a large scale.

By order of the Chief Commissioner of Assam,

L. J. KERSHAW,

Offg. Secretary to the Chief Commissioner of Assam.

A. S. P. O. (Rev.) No. 165*b*—395—13-9-1900.

ANNUAL REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR

1900-1901.

BY

F. C. HENNIKER, Esq., I.C.S.,

DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.

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FROM

F. C. HENNIKER, ESQ., I.C.S.,

Director, Department of Land Records and Agriculture, Assam,

TO

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 1st July 1901.

SIR,

I HAVE the honour to submit the Eighteenth Annual Report, giving an account of the operations of this Department for the year ending the 31st March 1901.

I have the honour to be,

SIR,

Your most obedient Servant,

F. C. HENNIKER,

Director, Department of Land Records and Agriculture, Assam.

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ANNUAL REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR

1900-1901.

CHAPTER I.

PREFATORY.

Charge.

1. MR. D. H. LEES, I.C.S., held charge of the Department from the 1st April 1900 until the forenoon of the 15th August, when Rai Sarat Chandra Banerji, Bahadur, M.A., B.L., assumed charge. On my return from furlough, I resumed charge of the Department on the forenoon of the 30th November 1900, and remained in charge until the close of the year. Mr. Bhupal Chandra Basu, B.A., M.R.A.C., M.R.A.S. (Eng.), was Assistant to the Director throughout the year.

Tours of the Director.

2. Mr. Lees was on tour for 15 days, during which he inspected the *ilam* settlement at Maulvi Bazar. Rai Sarat Chandra Banerji, Bahadur, spent 26 days on tour and paid visits of inspection to Gauhati, Roha (Nowgong), and Tezpur. He also made an inspection of the Traffic Registration Office at Dhubri, and of the Survey School at Gauhati.

I was on tour for 93 days, during which I inspected the work of the Land Records staff of most of the subdivisions of the Assam Valley and of Silchar and Jaintia in Cachar and Sylhet, respectively. I also inspected the *ilam* settlement work at Maulvi Bazar. The maps and papers of mandals and supervisor kanungos could not be examined in some cases, owing to their employment on census work. I met the Deputy Surveyor General (Colonel Hobday) at Goalundo in February 1901, and discussed with him some important matters in connection with the Provincial Survey Detachment. Besides this, I visited the experimental farm at Upper Shillong on four days, and Rai Sarat Chandra Banerji, Bahadur, one day.

Tours of the Assistant to the Director.

3. Exclusive of his visits to the Experimental Farm at Upper Shillong, Mr. Basu was on tour for 196 days during the year. Out of these, he spent 160 days in the Assam Valley in inspecting the mauza-book work in the Kamrup, Darrang, and Lakhimpur districts, and in an enquiry into the agricultural capabilities of the Kopili Valley in Nowgong. For want of time he was unable to visit the Sibsagar district. The remaining 36 days were spent by him in the Surma Valley in connection with his enquiries about the agricultural conditions of the Langai-Singla disforested area in Sylhet, and the settlement of the Dhaleswari disforested area in Cachar. Mr. Basu visited the Experimental Farm on 29 days during the year.

Tours of the Superintendent of Provincial Surveys, Assam, and Sub-Assistant Superintendent of Surveys.

4. Mr. J. H. O'Donel, Superintendent of Provincial Surveys, retired from service with effect from the 10th July 1900, and was succeeded by Mr. Thomas Shaw, Extra Assistant Superintendent, Survey of India Department. Mr. O'Donel spent 52 days on tour, during which he inspected the work of the supervisor kanungos and mandals of the sadr subdivision of Kamrup and all the three subdivisions of Sibsagar. He also held two first-class survey school examinations at Gauhati and Jorhat, and examined Babu Uttam Chandra Das, Extra Assistant Commissioner, in practical surveying at Sibsagar. Mr. Shaw was on tour for 93 days, and inspected the work of the sub-surveyors employed in Nowgong and Sibsagar, and of the supervisor kanungos and mandals of Gauhati, Nowgong, Jorhat, and Dibrugarh. He also held three first-class survey school examinations at Gauhati, Jorhat, and Dibrugarh, and a survey class for training of officers in practical surveying at Jorhat.

During the rains of 1900, Mr. C. A. O'Donel, Sub-Assistant Superintendent attached to the Provincial Survey Detachment, made a tour in the Darrang district for 37 days, and examined the mandals' papers of both the subdivisions of the district. The further tours of these officers (Mr. Shaw and Mr. C. A. O'Donel) in connection with survey work, pure and simple, are alluded to in another report.

CHAPTER II.

LAND RECORDS ESTABLISHMENTS.

Mandals and patwaris.

5. The number of mandals and patwaris entertained in the province on the 31st March 1901 was 1,135 of all grades, the sanctioned scale being 1,145. Of these, there are 296 in Kamrup, 205 in Sibsagar, 168 in Nowgong, 140 in Darrang, 108 in Lakhimpur, 97 in Cachar, and 96 in Sylhet. The sanctioned strength of mandals and patwaris was increased during the year by six patwaris (one of the first grade, two of the second grade, and three of the third grade), sanctioned for the disforested area in the Langai and Singla Valleys in the Sylhet district.

There was an addition of one mandal only in the number actually entertained, due to an increase in the Darrang district. The six additional appointments made in Sylhet were counterbalanced by a reduction of six men in the Jaintia Parganas of the same district. The number of mandals entertained in the first grade is gradually increasing; 13 promotions were made to this grade during the year.

The number of uncertificated mandals was further reduced during the year by 10. There are now 80 mandals without certificates, of whom 31 are exempted from passing in surveying. Of the remaining 49 unqualified mandals, 27 belong to the Nowgong district only. The Deputy Commissioner has been asked to depute these men to a survey school for training, and to avoid, as far as possible, appointing uncertificated men in future.

The average size of a mandal's circle in the Assam Valley districts is 14,958 *bighas* and of a patwari's circle in Jaintia and Cachar 20,381 *bighas* and 20,644 *bighas*, respectively. As stated in the preceding year's report, the smaller average size of the circles in the Assam Valley, as compared with Jaintia and Cachar, is due to the fact that a mandal's circle in Assam often contains a large area of fluctuating cultivation, which is more difficult to supervise than the fixed and permanent cultivation of Sylhet and Cachar. A redistribution of mandals' circles was sanctioned during the year in that part of the Barpeta subdivision of which the cultivated area has been reduced by constant floods, and the question of reduction of the number of mandals entertained in that part of the country is under consideration.

The pay of mandals and patwaris for all months, up to and including February 1901, was drawn before the close of the year in all districts, except one (Sibsagar). That district has three subdivisions. As the monthly pay-sheet for mandals has to be made out for the whole district, it is apt to be delayed in Sibsagar more than in other districts.

Survey schools.

6. The following statement gives in detail the number of pupils passed from each of the three survey schools in the province during the year, and the average cost per pupil, and compares the figures with those of the preceding year:

Year.		Number of pupils who received first-class certificates.				Number of pupils who received second-class certificates.				Total passed.	Total cost of the school.	Total receipts.	Net cost.	Average net cost of each passed pupil.
		Mauzadars.	Mandals.	Candidates.	Total.	Mauzadars.	Mandals.	Candidates.	Total.					
1		2	3	4	5	6	7	8	9	10	11	12	13	14
											Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1899-1900	Gauhati ...	...	...	21	21	1	1	43	45	66	1,101 14 3	766 0 0	335 14 3	5 1 5
	Jorhat ...	...	2	...	2	...	4	19	23	25	506 6 0	373 4 0	133 2 0	5 5 2
	Dibrugarh .	...	1	3	4	...	4	15	19	23	575 12 0	248 0 0	327 12 0	14 4 0
Total for 1899-1900 ...		...	3	24	27	1	9	77	87	114	2,184 0 3	1,387 4 0	796 12 3	6 15 10
1900-1901	Gauhati ...	...	...	17	17	1	5	53	59	76	938 6 9	631 0 0	307 6 9	4 0 9
	Jorhat ...	...	12	7	19	1	...	21	22	41	541 13 0	513 8 0	28 5 0	0 11 1
	Dibrugarh	...	3	1	4	...	1	19	20	24	560 4 0	246 0 0	312 4 0	13 1 6
Total for 1900-1901 ...		...	15	25	40	2	6	93	101	141	2,040 7 9	1,390 8 0	649 15 9	4 9 9

The results are very satisfactory. The total number of pupils passed has increased from 114 to 141 (the highest during the last twelve years), and the net cost to Government per pupil passed has fallen from Rs 6-15-10 to Rs. 4-9-9. Every school shows an increase in the number of pupils passed and a corresponding decrease in the average cost. The decrease in cost was most marked in the case of the Jorhat Survey School, and was due partly to the fact that, unlike other years, two examinations for first-class survey certificates were held at Jorhat during the year,—one in April 1900 and the other in March 1901. Leaving out of consideration the amount (Rs. 28) realised on account of fees and the number of pupils (13) passed in the March examination, the net cost for Jorhat comes to Rs. 2-0-2. The Dibrugarh Survey School has been slowly progressing for the last three years. The results as regards cost of the Gauhati Survey School are not quite so satisfactory. It was expected that with the abolition of the post of second master (from May 1900), the school would become very nearly self-supporting, but the number of pupils attending the school diminished.

I inspected all the survey schools during the year, and found the condition of things satisfactory.

Two examinations for first-class survey certificates were held by the Superintendent of Provincial Surveys at each of the survey schools at Gauhati and Jorhat, and one examination at the Dibrugarh Survey School.

Supervisor kanungo's touring and inspection.

7. Two new posts of supervisor kanungo in the first grade were sanctioned during the year in consequence of the formation of two new circles in Sylhet and Lakhimpur, respectively. On 31st March 1901, the sanctioned scale stood at 37 in the first grade and 21 in the second. The number actually entertained on that date was 25 in the first and 32 in the second grade, or only one more than at the close of the previous year, one of the two newly-created posts not having been filled up. The statement in Appendix I shows the area of each supervisor kanungo's circle and the number of mandals' or *patwaris'* circles in the cadastrally-surveyed portion of the province. The average size of a supervisor kanungo's circle is—

	Bighas.
Assam Valley	295,507
Sylhet	234,381
Cachar	250,310

The amount of touring performed by supervisor kanungos was on the whole sufficient. All the four supervisor kanungos of the Jaintia Parganas in Sylhet, and the eight supervisor kanungos of Nowgong, were on tour for over 200 days. In Sibsagar the supervisor kanungos of 8 out of the 9 circles spent more than 200 days on tour. In Darrang the prescribed amount of touring was performed only in half the number of circles. In Kamrup only in 6 out of the 14 supervisor kanungos' circles the prescribed minimum of 200 days was attained. In Goalpara the supervisor kanungo was on tour for 202, and 3 out of the 4 supervisor kanungos of Lakhimpur were more than 200 days on tour. The largest amount of touring was done by Gobinda Nath Datta, supervisor kanungo of the Dhing circle in Nowgong, who spent 263 days on tour. The amount of touring was insufficient in Cachar, owing to the employment of the supervisor kanungos mainly on settlement work. The two supervisor kanungos in charge of the Baroma circle in Kamrup were on tour for only 130 days.

Neither of the Government Surveyors (at Gauhati and Dibrugarh) spent a sufficient number of days on tour.

The total length of check-lines run by supervisor kanungos during the year was 1,620·57 linear miles, or 9·74 linear miles per square mile of fluctuating cultivation. These figures are satisfactory enough, in view of the fact that a large portion of the supervisor kanungos' time was absorbed by census work. The prescribed minimum of 4 linear miles per square mile of fluctuating cultivation was attained in all the circles of the province, except three (Hajo, Baroma, and Nalbari) in the Kamrup district. In the Nalbari circle, the cultivation being almost entirely permanent, it was probably not necessary for the supervisor kanungo to do more than he did. The same is not the case with Hajo and Baroma. The supervisor kanungo of Hajo, Santiram Das, failed to perform the required amount of touring, as well as the prescribed minimum of testing. Supervisor kanungo Bathuram Das is mainly responsible for both short touring and insufficient testing in the Baroma circle. Out of the 251 days, during which he held charge of the circle, he spent only 79 days on tour and ran only 2·85 linear miles of check-lines. In the course of inspection I noticed, amongst other shortcomings, the fault of running check-lines by supervisor kanungos in unsuitable places, in order to show a good return and of leaving blocks of new cultivation untested. This is, I fear, too

often the case, and consequently I cannot place full reliance on mere figures showing linear miles of check-line. But in the cases noted above, where the supervisor kanungo fell short in two respects, there is a fair indication that their work was not properly attended to. Very little testing was done by the Government Surveyor at Gauhati, while the surveyor at Dibrugarh did no testing at all.

Touring and inspection by Sub-Deputy Collectors.

8. The prescribed amount of touring was done in all subdivisions, except Hailakandi, Dhubri, Golaghat, and North Lakhimpur. There was no Sub-Deputy Collector in Dhubri and Golaghat for some time during the year. The Sub-Deputy Collector in charge of the Hailakandi subdivision was mainly employed on settlement work, and could not spend much time on tour. The Sub-Deputy Collectors in charge of the Kanairghat, Gauhati, and Dibrugarh tahsils failed to do the required amount of touring. The insufficiency of the touring in the Gauhati tahsil is reported to be due to the employment of the Sub-Deputy Collector, Babu Bholanath Das, in the Commissioner's office for a month and a half, in addition to his ordinary duties. In Dibrugarh, Babu Gopal Chandra Puri Bhuiyan, whose touring was found insufficient in the previous year also, only did 136 days in the year under report. He also neglected to supervise sufficiently the Land Records staff, which in his tahsil is in a very unsatisfactory condition.

Babu Gunahas Goswami, of the Roha tahsil (Nowgong), spent the greatest number of days (279) on tour, Babus Radha Mohan Das and Harendra Kumar Ghosh coming next with 247 and 239 days, respectively. The greatest length of check-lines (35·59 linear miles) was run by Babu Jajneswar Das Gupta, of Mangaldai. Babu Benudhar Rajkhoa discovered 35·70 acres of concealed cultivation. The amount of testing done was insufficient in many cases, but census work, which occupied much of the Sub-Deputy Collectors' time, must be allowed as some excuse.

Babus Radha Mohan Das and Harendra Kumar Ghosh of Nowgong, Mahendra Chandra De of Tezpur, Jajneswar Das Gupta of Mangaldai, and Debendra Kumar Mukherji of Barpeta, worked well during the year. Maulvi Mohammed Sadir did no testing at all.

Survey qualifications of tahsildars and mauzadars.

9. All the tahsildars in the province have now qualified themselves in practical surveying, except one, who is exempted.

Of the 127 mauzadars in the Assam Valley, 32 possess first-class and 44 second-class survey certificates. The number of qualified mauzadars is yearly increasing, and is now more than half of the total number of mauzadars.

Inspection and testing by tahsildars and mauzadars.

10. The tahsildars (who are not Sub-Deputy Collectors) and mauzadars did, on the whole, a fair amount of inspection of mandals' papers. The testing of field work done by the tahsildars was insufficient. Babu Chiniram Das, tahsildar in Kamrup, did no testing and inspection of mandals' work, and Babu Santiram Hazarika, tahsildar in Nowgong, wholly omitted to inspect mandals' papers, and did only a nominal amount of testing of field work. Babu Kaliram Chaudhury in Kamrup did not inspect the papers of any mandal, and Babu Guru Prasad Kakati in Sibsagar tested the field work of two mandals only. The length of check lines run by Babu Banga Chandra Chaudhury was insignificant.

The supervision exercised over patwaris by the naib-tahsildar of the Gowainghat tahsil in the Jaintia Parganas was insufficient. He examined the papers of fifteen and tested the field work of ten patwaris only.

The mauzadars of Kamrup and Darrang checked the mandals' papers sufficiently. The number of mauzadars who inspected mandals' work in Goalpara, Nowgong, and Lakhimpur was comparatively very small.

Inspection of Land Records staff by Deputy Commissioners and Subdivisional Officers.

11. The work of the Land Records staff was inspected during the year by all the Deputy Commissioners and Subdivisional Officers, except the Deputy Commissioner, Cachar, and the Subdivisional Officers of Hailakandi and North Lakhimpur. As regards Cachar, there was very little opportunity for inspection of the ordinary kind, as the Land Records staff are hardly even yet fairly started in their regular maintenance work, the settlement being only recently concluded. The papers of 592 mandals and patwaris (547 in the cadastral and 45 in the non-cadastral area) were examined, against 359 in the preceding year. Special attention to this very important work was paid by the Deputy Commissioners of Sylhet (Mr. Lees), Kamrup (Captain Gurdon), and Nowgong (Mr. Gruning), and the Subdivisional Officer of Mangaldai (Mr. Strong). These officers alone examined

the papers of 339 mandals. The Deputy Commissioners of Darrang and Lakhimpur and the Subdivisional Officers of Barpeta and Jorhat also examined the papers of a sufficient number of mandals. Mr. T. Emerson, I.C.S., Assistant Commissioner of Gauhati, did good work in this direction by examining the work of 71 mandals. The length of check lines run was on the whole small. But it is very satisfactory to find a general improvement in the amount of attention paid by the Deputy Commissioners and Subdivisional Officers to this duty, especially considering the census. I would again point out, as was pointed out by Mr. Lees last year, that a useful and effectual form of inspection is to examine the check lines of supervisor kanungos and compare them with the tracings, as this shows the value of the supervisor kanungo's own testing.

Details of the inspection work done by the Deputy Commissioners and Subdivisional Officers are given in Appendix C. The inspection work done by supervisor kanungos, Sub-Deputy Collectors, tahsildars, and mauzadars is shown in Appendices A, B, D, E, F, and G.

Results of inspection by Director, Superintendent, Provincial Surveys, and Sub-Assistant Superintendent.

12. I am glad to be able to record a distinct improvement in the work of maintenance of records in the district of Nowgong, especially in the southern and western circles, the Sub-Deputy Collectors and supervisor kanungos of which deserve commendation.

As regards the other districts, the inspections of the Director, Superintendent of Provincial Surveys, and Sub-Assistant Superintendent of Surveys, still disclose many shortcomings. To mention some of them :

(*a*) Discrepancies are sometimes found between the *dagchithas* and the map. A comparison of the two at inspection affords a useful test of the accuracy of the mandals' papers.

(*b*) The areas of newly-assessed lands are often incorrect. In Sibsagar some mandals seem to have systematically under-estimated the area of *khiraj* land.

(*c*) The demarcation of blocks of land for which application is made to the Deputy Commissioner or Subdivisional Officer (commonly called *Kabula mati*) for grass-cutting or other purposes should be insisted upon according to rule. Cases have come to light where lands have not been demarcated, and have been mapped *approximately* in consequence.

(*d*) The supervisor kanungos do not move about among their mandals as frequently as is desirable. Each mandal should be visited six times in the year at least.

Maintenance of records-of-rights up to date.

13. The important work of recording corrections in the copies of the *jamabandi* kept at district and subdivisional headquarters was a subject to which I paid special attention at inspections. I inspected nearly all the registrar kanungos in the province. The delay in making the necessary corrections was chiefly due to the neglect by tahsildars and mauzadars to return the *parwanahs* promptly. These *parwanahs* are issued for the correction of the mofussil (tahsildars' or mauzadars') copy of the *jamabandi* and the *dagchitha*. The delay was greatest at Sibsagar and Dibrugarh. In the former the time taken in returning the *parwanahs* was found to be generally a year, while in the latter I found many cases in which *parwanahs* issued in June 1900 were not returned at the time of my inspection in March 1901, nine months having elapsed. The Deputy Commissioners should deal severely with the tahsildars and mauzadars, who will not, after repeated reminders, return these *parwanahs*. The registrar kanungos were themselves also at fault in Nowgong and Dibrugarh, but there was a great improvement in Nowgong over the state of things found by Mr. Kershaw in the previous year.

Condition of survey marks.

14. The statement in Appendix H gives the condition of survey marks on the 30th June 1900. The number of marks lost or left unvisited was very large in North Sylhet (Jaintia), Barpeta, Gauhati, and Sibsagar sadr subdivisions. The percentage of marks not repaired was high in Karimganj (Pratabgarh), Barpeta, Gauhati, Tezpur, and Sibsagar sadr. The attention of the district officers has been drawn to this matter. In the Jaintia Parganas, 1,144 marks were lost in the earthquake of 1897, and it has been decided to have only 500 of these marks re-erected. In Nowgong and in both subdivisions of Kamrup, a large number of theodolite stations have been lost in thick jungle, or have gone under water, as a result of earthquake and floods. Sanction had to be given to abandoning many of these stations. Regrettable as this may be, it is no use ignoring actual facts,

and it had become a waste of time for the mandals to search endlessly after marks in land which is wholly unprofitable for yielding revenue. The inspection of survey marks by Sub-Deputy Collectors was insufficient everywhere, except in Sylhet, Mangaldai, Golaghat, and North Lakhimpur.

CHAPTER III.

UTILISATION OF LAND RECORDS.

The Mauza-book.

15. The Mauza-book was introduced last year in the Barpeta subdivision of Kamrup. It is now in operation in all districts of Assam Proper, except Nowgong. It is proposed to introduce it in Nowgong in the course of the current year.

The mauza-book is now being maintained in 4,919 villages with an aggregate area of 4,854·8 square miles, against 4,397 villages, and a total area of 4,284·08 square miles reported last year. In spite of the additional work thrown upon the Land Records staff by the late census, the village and mauza statements of the mauza-book have been written up to date in most of the supervisor kanungos' circles; the work is somewhat backward in the Golaghat, Sibsagar sadr, and Tezpur subdivisions, and is particularly unsatisfactory in North Lakhimpur.

Under the mauza-book rules, a sub-tenancy register is required to be prepared annually for every village in which the mauza-book is in operation. The preparation of these registers takes up a great deal of the mandals' time in parts of the Assam Valley, like Kamrup and Mangaldai, where sub-tenants are very numerous; it was therefore thought desirable to suspend the work last year in order to set free the mandals for census work. The sub-tenancy registers prepared in the preceding year (1899-1900) show the following areas held by sub-tenants and their percentages on the total cadastrally-settled areas of the villages in which the mauza-book is in operation in the several subdivisions of the Valley,—Gauhati 103,605 acres, 22·4 per cent.; Mangaldai 18,484 acres, 9·5 per cent.; Tezpur 2,689 acres, 3·6 per cent.; Jorhat 6,705 acres, 2·4 per cent.; Golaghat 1,906 acres, 1·3 per cent.; Sibsagar sadr 2,429 acres, 1·1 per cent.; North Lakhimpur 415 acres, 1·4 per cent.; and Dibrugarh 2,663 acres, 2·8 per cent.

The progress made by mandals in classifying *rupit* lands and in the testing of the same by the Sub-Deputy Collectors is noted below for each subdivision:

Sibsagar Sadr.—The report received from this subdivision is obscure. It seems that no progress was made during the year in classifying *rupit* lands, and in writing classification notes under the revised mauza-book rules. The classification of 38 villages (16 in the central and 22 in the western circle) was tested during the year by the Sub-Deputy Collectors in charge; the Sub-Deputy Collectors in charge of the western circle (Babu Benudhar Rajkhowa and Babu Annada Charan Bhattacharyya) appear to have done nothing in this direction. Even allowing for the census, the mauza-book work in this subdivision cannot be considered to be in a satisfactory condition.

Jorhat.—Classification very nearly completed; classification notes remain to be written for 171 out of 440 villages classified up to the end of the year. The classification of 20 villages was tested by Sub-Deputy Collector during the year, the total number tested up to the end of the year being 148 out of 440 villages classified. The progress made may be considered satisfactory.

Golaghat.—No progress was made last year in revising classification and writing notes thereon under the revised rules issued in September 1899. In 23 villages, the classification was tested by the Sub-Deputy Collectors in charge, the total number tested up to the end of the year being 157, against 237 villages classified. The progress in this respect was satisfactory.

Dibrugarh.—Classification very nearly completed, but very little testing was done during the year by the Sub-Deputy Collectors in charge. Babu Gopal Chandra Puri Bhuiyan tested the classification of seven villages in the sadr tahsil, while Babu Ram Kumar Aditya did absolutely nothing. The testing done by the former was considered unsatisfactory by Mr. Basu.

North Lakhimpur.—Neither *rupit* classification nor water-flow marking was carried out in a single village during the year. The Sub-Deputy Collector, Maulvi Abrar Hossain, tested the classification of ten villages during the year. In every other respect he appears to have wholly neglected the mauza-book work.

Tezpur.—In this subdivision, the classification work was completed once under the old mauza-book rules, and is now undergoing revision under the revised rules issued in September 1899. In 26 villages classification was revised during the year, the total number so revised being 62 at the close of the year. The progress was not quite satisfactory. The Sub-Deputy Collector, Babu Mahendra Chandra De, tested the classification of seven villages, and was unable to do more owing to his being placed in charge of the district census office.

Mangaldai.—Classification work has made excellent progress in this subdivision, especially in the Patharughat circle, where it is very nearly completed. The classification of 40 villages was tested by the three Sub-Deputy Collectors working in the subdivision. Babu Jajneswar Das Gupta tested 24 and Babu Rama Kanta Barua and Munshi Didaruddin Ahmed 8 each. The outturn of testing by the two latter was deficient.

Gauhati.—The classification work made little progress during the year. The Sub-Deputy Collectors, too, appear to have done very little in testing the classification work of the mandals. It appears that in only 40 villages was classification carried out, and in only 5 was it tested by two out of the 5 Sub-Deputy Collectors who held charge in different parts of the subdivision. A very much larger outturn was expected from the large body of mandals (211 in number) and the number of Sub-Deputy Collectors working in this subdivision.

Barpeta.—Mr. Basu started the classification work in this subdivision during the latter part of the year, but it could not be proceeded with on account of the census.

The work of marking the direction of water-flow has also made good progress in every subdivision, except Gauhati and Barpeta, where the work was only lately introduced; but, as remarked last year, accurate work cannot be expected under this head. The number of villages, of which the economic condition was examined and noted on by the Sub-Deputy Collectors, was as follows: Sibsagar sadr 104, Jorhat 20, Golaghat 14, Dibrugarh 1, North Lakhimpur 4, Tezpur 3, Mangaldai 16, and Gauhati 8. No villages were examined in Barpeta, the mauza-book being still new to the subdivision. The progress of this work was far from being satisfactory in Tezpur, Dibrugarh, North Lakhimpur, and Gauhati. Although a very large number of villages is reported to have been examined in Sibsagar sadr, very few village notes have as yet been received by me from that subdivision.

A very large number of crop cuttings was made during the year under the mauza-book rules. The total number of experiments made last year was 1,799 against 1,396 cuttings made during the preceding year. The majority of the experiments were carried out by supervisor kanungos and mandals. Fewer irregularities were noticed last year in the manner of conducting crop experiments than were observed in the preceding year. With the exception of the Deputy Commissioner of Sibsagar, who conducted two crop-cuttings, none of the District or Subdivisional Officers carried out any crop experiments during the year. Although the aggregate number of experiments made during the year was very large, very few were made by the Sub-Deputy Collectors. In Gauhati, five Sub-Deputy Collectors carried out a total of only three experiments; in Sibsagar sadr, three Sub-Deputy Collectors made only four experiments; in Dibrugarh, two Sub-Deputy Collectors made only one experiment. Babu Mahendra Chandra De at Tezpur, Babu Radha Kanta Handiqui at Namtidol, Maulvi Abrar Hussain in North Lakhimpur, and Babu Gopal Chandra Puri Bhuiyan in Dibrugarh failed to make a single experiment.

As mentioned in the last annual report, the initiation of special experiments with the object of obtaining an accurate knowledge of the average outturn of the various crops grown, the prices obtained for produce, the cost and profits of cultivation, etc., was postponed in view of the recent census.

During the year Mr. Basu inspected and reported on the mauza-book work in every district, except Sibsagar, which he was unable to visit for want of time. Two circles of the Gauhati subdivision (Hajo and Barkhetri) were also left unvisited for the same reason. Mr. Basu's inspection reports show that, although the mauza-book was making satisfactory progress on the whole, it had not in some places received due attention from the Sub-Deputy Collectors in charge, and consequently remained incomplete and wanting in accuracy. Babu Gopal Chandra Puri Bhuiyan, tahsildar of Dibrugarh, and Maulvi Abrar Hussain, Sub-Deputy Collector, North Lakhimpur, were found to have neglected the mauza-book work. Among those who worked well, Mr. Basu specially mentioned the names of Babus Rajani Kanta Bardalai at Barpeta and Babu Mahendra Chandra De at Tezpur.

With the exception of Captain Gurdon in Kamrup, none of the District or Subdivisional Officers was able to exercise any effective supervision over the mauza-book work. The census was in the way. It is to be hoped the mauza-book will receive due attention from them in future. The importance of the work for the next re-assessment of the valley does not appear to be generally recognised.

Special enquiries.

16. As usual, it devolved upon the Director and Assistant to the Director to enquire while on tour into various matters connected with revenue administration, to which particular attention had been drawn. Proposals were made (1) to consolidate *pattas* held by the same person within a mauza, (2) to farm out riverain tracts in blocks for a period of years, and

(3) to encourage cultivation by leasing waste on favourable terms. Into these I enquired, and have separately reported to the Chief Commissioner.

In April 1900, Mr. Basu was deputed, under the orders of the Chief Commissioner, to Nowgong to enquire about and report on the agricultural conditions of the Kopili Valley.

During the cold weather he reported on the agricultural conditions of the Langai-Singla disforested area in Sylhet, and also on the present condition of the settlement in the disforested area on the Dhalesvari river in Cachar.

A report was also submitted by him on the material condition of a tract of country in North Kamrup, which had been affected by the earthquake of 1897 and its sequelæ.

CHAPTER IV.

SCIENTIFIC AND NATIONAL ENQUIRY UNDER IMPERIAL CONTROL.

Meteorology.

17. In accordance with the orders conveyed in letter No. 965Misc.—781R., dated the 11th March 1897, from the Secretary to the Chief Commissioner of Assam to my address, a separate report on the registration of rainfall has been submitted. The total number of registering stations in the province was 116 on the 31st March 1901, against 115 in the preceding year. A map illustrative of the fall of rain in each of the registering stations is annexed to this report.

Economic products: Index collections.

18. At the instance of the Reporter on Economic Products to the Government of India, botanical specimens of five plants mentioned in Appendix J, Part I, were sent to him for the index collections of the Imperial Institute and Indian Museum.

Commercial collections.

The Reporter was also supplied with specimens of 14 economic products for the commercial collections. A list of them is given in Appendix J, Part II. As stated in last year's report, steps were taken to supply the Reporter with 20lbs. of the seed of *Gynocardia odorata* (ver. *Chaulmugra*, Bengali). There is no trade in this product at present. It is a tree that grows wild in the jungle. It gives seeds which are pressed to give an oil believed by Hindus to be a specific for leprosy. It is of ancient repute in India, and is gaining favour as a drug with practitioners in Europe. Only 8lbs. of the seed could be supplied by the Deputy Conservator of Forests, Sibsagar division. A further supply has been promised by the Deputy Conservator of Forests, Lakhimpur. I have had enquiries from a French firm in Calcutta about this product. At the request of the Reporter, seed of upland rice grown in the Jaintia Hills was supplied to him for transmission to Travancore and New South Wales for experimental cultivation. Three plants mentioned in Mr. Basu's Note on the lac industry of Assam (Bulletin No. 6 of this Department), were identified during the year, *viz.*, *Pannal* (*Writex coccinea*), *Kukursuta* (*Grewia multiflora*), *and Hukta-pata* (*Grewia lœvigata*).

Botanical specimens of 28 plants were submitted to the Reporter for accurate identification in connection with the revision of the list of field crops grown in Assam. All the plants except one have been identified by the Reporter. A list of them is given in Appendix J, Part III. The existence of several of these plants in cultivation in Assam was previously unknown.

The Subdivisional Officer, Jowai, also sent fruits and specimens of trees locally known as *Sohliang*, *Sohtyngklong* and *Sohslashet*, to the Reporter on Economic Products for identification, but their scientific names have not yet been communicated.

A species of salt-yielding plant, known in Assam as *Hatkhár*, was identified by the Reporter as *Achyranthes aquatica*. Salt is obtained from this aquatic plant in certain parts of the Assam Valley. The plant is burnt and salt extracted from the ashes.

Veterinary science.

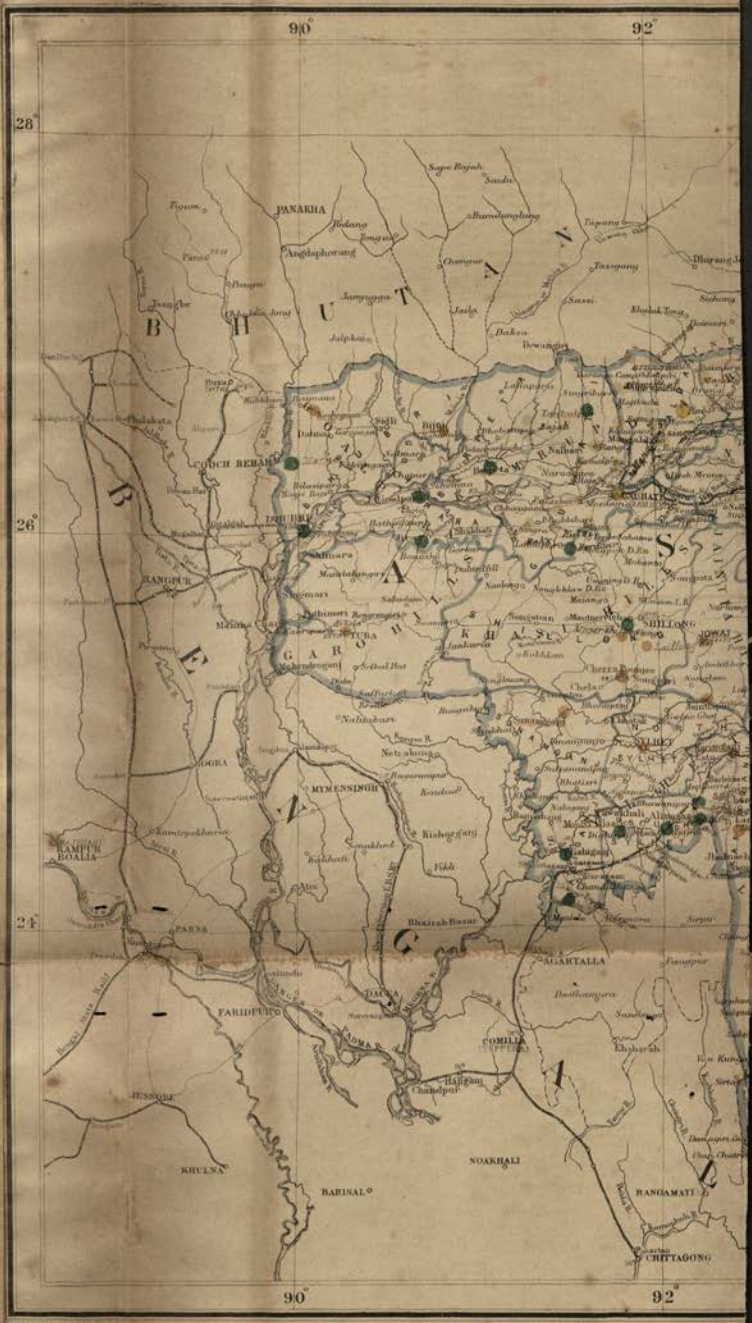
19. The statement in Appendix J shows the number of deaths among cattle reported from the several districts of the province during the past two years, and the causes to which they are attributed. The total number of deaths reported was 97,157, against 130,936 in 1899-1900. There was a decrease in all the districts, except Lakhimpur, where a marked increase in the number of deaths occurred, due to the prevalence of cattle-disease in a rather virulent form in parts of the sadr subdivision during some months of the year. In most of the other districts, the decrease was noticeable and satisfactory.

The Veterinary Surgeon, Mr. H. A. Stuart, who was employed under the Dibrugarh Local Board, resigned his appointment on the 21st July 1900, after doing useful service in curing cattle.

REFERENCES.

District.	Name of station.	Rainfall for 1900-1901.
Cachar	1. Silchar	94·83
	2. Barkhola	103·95
	3. Bikrampur	114·09
	4. Jatinga Valley	132·17
	5. Nemotha	123·14
	6. Diwan	109·80
	7. Mesierkhal	30·74
	8. Hailakandi	104·91
	9. Badarpur	94·00
	10. Jaffirband	97·14
	11. Koyah	57·16
	12. Kukicherra	60·42
	13. Hadeng	59·82
	14. Maher Saddle	58·91
	15. Paoling	48·59
	16. Maiheng	44·07
	17. Mupa	50·89
Sylhet	18. Sylhet	111·46
	19. Lalakhal	177·80
	20. Karimganj	108·01
	21. Duliajherra	101·8
	22. Adam Tila	87·84
	23. Sephinjuri Bil	83·90
	24. Samanbagh	91·64
	25. Maulvi Bazar	87·28
	26. Langla	82·61
	27. Habiganj	98·68
	28. Chandpur	41·58
	29. Sunamganj	124·59
Khasi and Jaintia Hills	30. Shillong	73·79
	31. Upper Shillong	83·07
	32. Laitlyngkot	147·11
	33. Maophlang	200·63
	34. Cherra Punji Police Station	418·04
	35. Jowai	117·64
Garo Hills	36. Tura	118·0
Goalpara	37. Dhubri	80·21
	38. Mornai	58·61
	39. Kachugaon	115·34
	40. Bijni	103·47
	41. Goalpara	76·35
	42. Dasnia	84·00
Kamrup	43. Gauhati	49·37
	44. Mandaksia	59·53
	45. Kamalpur	59·93
	46. Rangiya	63·37
	47. Ramgaon	51·67
	48. Tamulpur	77·20
	49. Hajo	59·07
	50. Rani	63·83
	51. Palashari	58·39
	52. Barbar	93·65
	53. Kuiri	71·22
	54. Chhaygaon	70·14
	55. Boko	71·16
	56. Sonapur	53·28
	57. Barpeta	73·68
	58. Bajali	71·75
Darrang	59. Tezpur	60·16
	60. Chandubi	59·63
	61. Bureli	63·44
	62. Balipara	63·13
	63. Barpukhuri	79·81
	64. Behali	70·39
	65. Gohpur	61·05
	66. Mangaldai	61·29
	67. Kopati	52·15
	68. Singtimari	51·26
	69. Kahira	48·04
	70. Attorkhat	61·35
	71. Orangajuli	62·65
	72. Kerteniya	66·93
	73. Majbat	63·51
Nowgong	74. Nowgong	52·35
	75. Kaluri	50·64
	76. Sekoni	60·13
	77. Kolibor	61·67
	78. Sukinhoeff	53·20
	79. Kaithoki	58·24
	80. Lanka	53·70
	81. Lumding	55·71
Sibsagar	82. Sibsagar	80·67
	83. Sonari	75·79
	84. Ataburi	82·13
	85. Nazira	87·25
	86. Amguri	80·74
	87. Jorhat	79·32
	88. Sciong	73·76
	89. Dafla Ting	56·60
	90. Golaghat	56·68
	91. Nigriting	30·72
	92. Difla	63·26
	93. Dimapur	67·12
Lakhimpur	94. Dibrugarh	84·77
	95. Bulijan	76·04
	96. Dum Duma	72·7
	97. Sadiya	72·46
	98. Margherita	69·71
	99. Jaipur	56·18
	100. Wilton	93·03
	101. Nitma	74·70
	102. North Lakhimpur	104·96
	103. Pathalipam	116·73
	104. Dhakuakhana	93·58
	105. Hermatti	98·20
Naga Hills	106. Kohima	52·90
	107. Wokha	87·31
	108. Mokokchung	83·95
	109. Tamlu	107·92
Manipur	110. Manipur	49·56
Lushai Hills	111. Aijal	73·74
	112. Shiaung	72·35
	113. Changsihi	60·82
	114. Tuirial	85·13
	115. Lungleh	104·71
	116. Demagiri	72·92

MAP SHOWING THE POSITION OF RAINFALL-RECORD DURING



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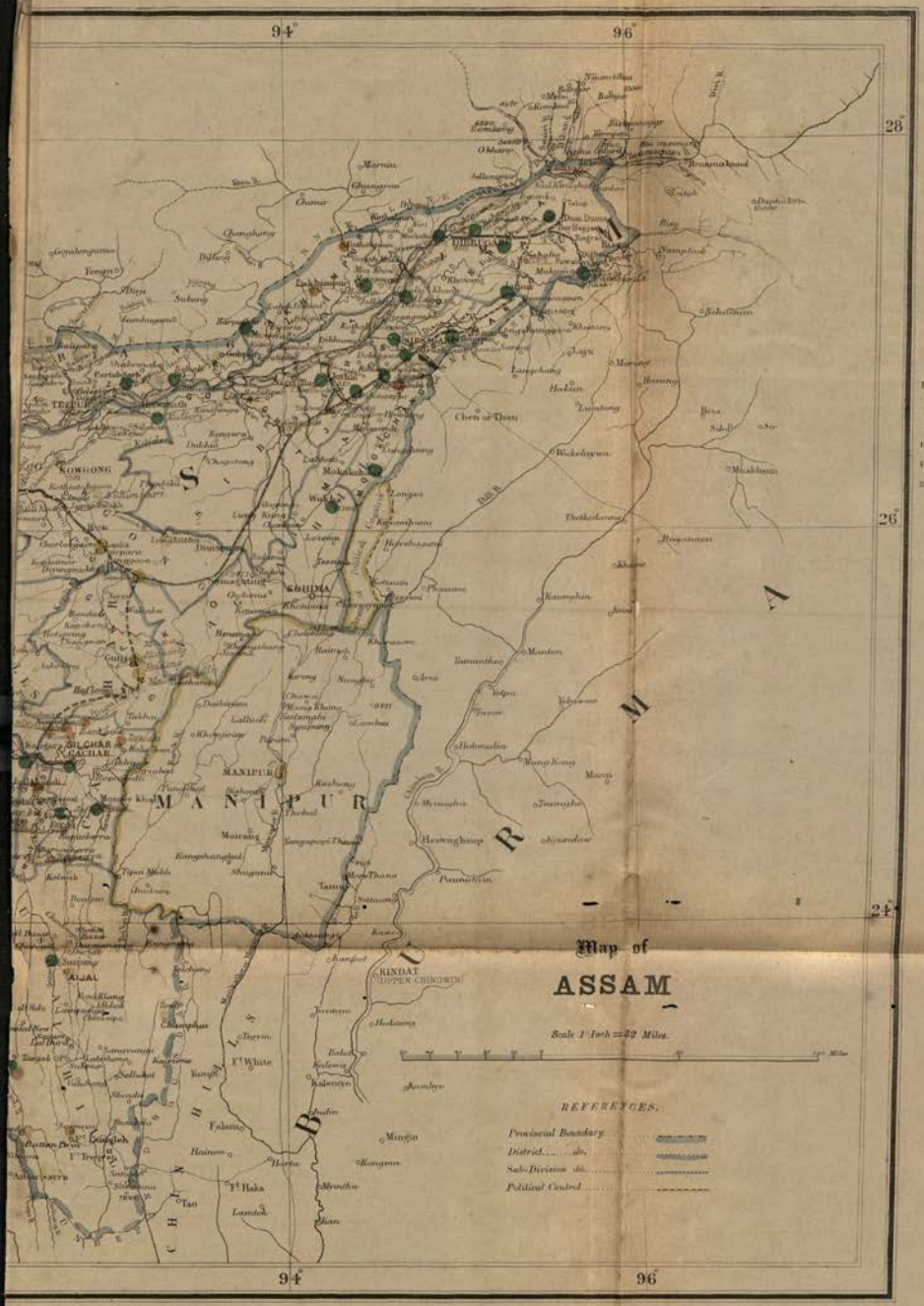

...ion of Colonel St. G. C. Gore, R.E., *Surveyor General of India,*
March 1900.

With Additions and Corrections to 1901.

Litho., S. I. O., Calcutta.

No. 448-S. 00.

20. The new sugarcane disease *Trichosphæria sacchari* has been again reported from Upper Assam (*vide* paragraph 32 *infra*). Dr. Watt, Reporter on Economic Products, was consulted on the subject, and has recommended certain remedial measures, *e.g.*, the burning of all diseased plants, the cropping of the land with crops other than sugarcane for two years, the cultivation of blight-proof varieties, etc., but in the existing condition of agriculture in Assam it is idle to expect the cultivator to adopt any effective measures for combating the disease.

Trichosphæria sacchari.

21. In October last, samples of paddy affected with mildew, received from the Political Agent in Manipur and Superintendent of the State, were forwarded to the Reporter on Economic Products to the Government of India for his inspection. The disease is reported to cause much injury to stored paddy there. The samples were examined by Dr. Butler, Government Cryptogamist, who was, however, unable to arrive at a definite opinion as to the cause of the "mildewing," as the grain had lain for over six months from the time that the samples were taken. At his request steps have been taken to supply him again with fresh samples of the mildewed paddy for the purpose of further examination.

Diseased paddy.

22. A sample of diseased potatoes grown on the Upper Shillong Experimental Farm was sent to the Reporter on Economic Products to the Government of India for examination. The sample was submitted to Dr. Butler for examination, but he was unable to arrive at any definite opinion as to the cause of the disease, and has asked for specimens of complete plants to be sent to him for further investigation.

Potato disease.

23. These returns were compiled, as usual, in this Department, and submitted in Return No. XLIB on the 8th September 1900. The estimates of the areas under different crops in the permanently-settled tracts of the province for the purposes of Table A3 of the Return were utilised in the return.

STATISTICS.
Agricultural and fiscal statistics.

24. The Quarterly and Annual Reports on the Rail and River-borne Trade of the Province were issued as usual, and a note on foreign trade was drawn up for incorporation in the Annual General Administration Report. Since the close of the year, orders have been received for the discontinuance of the publication of Quarterly Rail and River-borne Trade Returns of the province.

Trade statistics.

The number of traffic registration offices remained the same as in the preceding year, *viz.*, Dhubri, Bhairab Bazar, and Maulvi Bazar (Noakhali). The traffic registration office at Dhubri was inspected during the year by Mr. D. H. Lees and Rai Sarat Chandra Banerji, Bahadur, and by me, after the close of the year.

25. The return of mineral statistics was, as usual, prepared in this Department from information obtained from district officers, and submitted on the 1st April 1901.

Mineral statistics.

26. A Note on the results of experimental crop cuttings carried out during the year is under preparation, and will be submitted separately.

Experimental crop cuttings.

27. As usual, the following returns were compiled by this Department :

Returns of prices-current and wages.

Weekly return of retail prices-current of food-grains and salt for submission to the Government of India in the Department of Finance and Commerce.

Fortnightly return of retail prices-current for submission to the Director-General of Statistics.

Half-yearly return showing the average wages of agricultural labourers, etc., for submission to the Government of India in the Department of Finance and Commerce.

CHAPTER V.

SCIENTIFIC AND LOCAL ENQUIRY UNDER PROVINCIAL DIRECTION.

28. The farm was continued in the same place, *viz.*, Upper Shillong, at an elevation of about 1,000 feet above Shillong. The rainfall there amounted to 83·97 inches, as compared with 73·59 in Shillong itself, and 96·71 in the previous year. The rainfall is thus not so much in excess of that in Shillong as was formerly supposed, but it has proved too damp for cereals and linseed. Root crops do well and fodder grasses, but the seed-forming

Experimental Farm.

crops of Upper India (wheat, barley, oats, linseed, etc.) are liable to fail, owing to the fact that the rains set in about the time of flowering and prevent seed-formation. The crops tried in the year under report were as follows:

Potatoes.—This crop is sown in February and gathered in July, and consequently extends over two official years. Last year's report gave a description of the crop harvested in July 1900, *i.e.*, during the year now under report. It was eminently successful, the outturn being more than 14 times the quantity of seed used. The crop now in the ground suffered from want of rain in the spring months.

Fodder grasses.—Rye-grass, clover, sainfoin, vetch, lupin. Of these, rye-grass and clover did best. I propose to pursue their cultivation further, as they form an excellent food for horses and cattle. Any quantity could be sold to the European and other residents of Shillong for their horses or cows,—not to speak of feeding the farm herd. Last year the outturn of hay was 2 maunds 35 seers from 1-20th of an acre. This is a good result, nearly 2 tons of hay per acre, which would be good in England. There is now $1\frac{1}{8}$ acre of these crops in the ground. If I had discovered in time to order more seed, I would have had a larger area planted. Lucerne has been tried now for three years, but without success.

Fodder roots.—Beet, mangel, turnips, swede, and carrots. These all did fairly well, 43 maunds being produced. They were all used to feed the farm cattle.

Oats and linseed were tried, but, as already remarked, were unsuccessful. Experiments were made in flax, arrowroot, and groundnut. Of these, flax gave a poor outturn, but the quality of the fibre was good and the crop was healthy. The groundnut is a crop which is eaten by all classes of the natives of India. The nut is also exported largely to France, where it is pressed to yield an oil used in soap-making, and also as a substitute for olive oil. The crop did well, though, owing to an unfortunate mistake, it was not harvested in time. It is being tried again. It need hardly be said that the object of the farm is to discover new crops that may be grown profitably in these hills. Consequently, it is no matter for surprise if many of the crops tried are unsuccessful. It would be of no value to plant the farm with trees or crops which are already known to be successful in the Khasi Hills. Some fruit-trees have been started, *viz.*, pears, apples, and plums. Sufficient time has not yet elapsed to estimate the result. Mr. Basu is not very hopeful.

The *Silo pits* have proved in this year, as in previous years, a complete success. Four pits were filled with grass (240 loads) in August. The silage was used to feed the farm cattle from December to the end of March, *i.e.*, precisely when natural grass is extremely scanty.

The farm herd consists of 48 head of cattle. They yielded milk to the value of Rs. 460, which more than covered the cost of their up-keep, and this is without reckoning the value of manure to the farm. The cost of up-keep, amounting to Rs. 444, includes the wages of a herdsman, part wages of a milkman, and cost of oil-cake and salt. Some calves also were sold. The milk was supplied to the Shillong dairy from the time that concern was started.

The total expenditure on the farm was Rs. 2,328-13-7, or almost exactly the same as in the previous year. Receipts were Rs. 239. These figures (both receipts and expenditure) do not include the receipts and expenditure on account of cattle already mentioned.

Seed distribution: potatoes.

29. During the year 34 maunds 15 seers 4 chittaks of seed potatoes were supplied from the Experimental Farm at Upper Shillong, mostly in two consignments, *viz.*, 15 maunds to the Deputy Commissioner, Naga Hills, and $13\frac{1}{4}$ maunds to the Deputy Commissioner, Khasi and Jaintia Hills, for distribution. Of the rest, a small quantity (about 25 seers) was distributed and 3 maunds sold, among certain Government employés of Shillong for experimental cultivation in their gardens; the result obtained by them was uniformly satisfactory.

The seed supplied to the Subdivisional Officer, Mokokchang, during 1898-99, was planted towards the end of April 1900, but the results obtained were not satisfactory owing to late sowing.

Tobacco seed.

Mr. Mati Lal Haldar, a Bengali tea-planter, was supplied with tobacco seeds for experimental cultivation. Though late in sowing, four kinds of tobacco, *viz.*, Manilla, Landreth, White Barleigh, and Yellow Orinoko, grew fairly well, and are now being cured. The final result of the experiment will not be known until the curing has been finished.

30. An experimental dairy was established during the year at Shillong with the object of improving the local supply of dairy produce and introducing a new industry in the province. The dairy has been equipped with a set of modern machinery, consisting of a separator, two churns, and a butter press. The machinery was purchased out of a supplementary grant of Rs. 500. At present only butter is prepared; it is intended to attempt cheese-making hereafter. Both cow and buffalo milk is used, some being obtained from the herd of the Upper Shillong Experimental Farm, and the rest purchased. Excellent butter is produced. It is largely supplied to the residents of Shillong, and also (when tinned) to residents in other parts of Assam. It is found to reach such remote stations as Kohima and Dibrugarh in good condition. The dairy commenced work in July last year. Owing to various initial difficulties which had to be overcome one by one, it did not begin to yield any profit till towards the close of the year. As the result of the year's working, it left a profit of Rs. 26-14-8½. The total value of milk used during the year amounted to Rs. 887-2-9. The profits are now on the increase, having amounted to Rs. 310 during the first quarter of the current year. It is intended to transfer the dairy to some private individual as soon as the prospects of its being a paying concern have been assured.

Experimental dairy.

31. Mr. James Hunter has again kindly sent me a note of the progress of the sisal plantation at Dauracherra in South Sylhet. It is interesting to learn that this enterprise continues to thrive, and the proprietors seem in a fair way to attain the success which they so well deserve.

Sisal hemp and rhea.

Mr. Hunter writes :—

Since the date of my last letter, I am pleased to be able to report another very satisfactory sale of fibre in London. The consignment was much larger than our first one, and the brokers inform us that for large consignments even better prices than those obtained may be looked for.

The plants continue to grow well, and (a most satisfactory feature) they were in no way affected by the rather severe drought of the beginning of this year (1901). The Dauracherra concern from its surplus stock has met considerable orders for young plants from persons in Cachar, Sylhet, and the Assam Valley. It is understood that a small syndicate of native gentlemen in Sylhet is about to open a plantation, and there have been many enquiries from commercial firms and others regarding the method of sisal-growing and the number of young plants the Dauracherra concern can undertake to supply.

I have no further information about Mr. Lawrie's experiment in rhea. I understand he is in England.

32. In last year's report mention was made of an experiment conducted by Babu Debeswar Gossain in the cultivation of sugarcane in the Golaghat subdivision. The plantation has been further extended, and now covers an area of about 100 *bighas*. Four varieties of sugarcane, locally known as Shamsara, Dhali, Kajli, and Black Bombay, were grown. The outturn obtained from these different varieties was 21, 19¾, 12½, and 20 maunds of *gur*, respectively, per *bigha*, and the total outturn was 1,580 maunds. These are excellent yields as compared with what is ordinarily obtained in the Assam Valley, where the average outturn of *gur* is less than 7 maunds per *bigha*. The new disease, *Trichosphæria saccharı*, was again reported from this farm. It caused considerable damage to the crop, in particular to the Shamsara and Black Bombay varieties. No effective remedy of the disease is yet known. In March last, Babu Debeswar Gossain was supplied by this Department with 1,000 cuttings of Shamsara and 2,000 cuttings of Khari sugarcane, obtained through the Director of Land Records and Agriculture, Bengal. The latter is a very hard variety, and is likely to be proof against blight. The result of the experiment will not be known until the next cold weather.

Sugarcane.

Another experiment in sugarcane, which was also reported last year, is being conducted by Mr. Mati Lal Haldar, manager of the National Tea Company at Monai in the Darrang district. The details of last year's cultivation are not fully known, but Mr. Basu, who visited the plantation in March last, found the cane crop a fairly good one. Of three varieties of cane tried, *viz.*, Shamsara, Dhalsunder, and Dacca Ganderi, the first did best, as was also the case in the experiment of Babu Debeswar Gossain in Golaghat. Mr. Haldar's cane escaped the disease *Trichosphæria* alluded to above.

33. In August last, Mr. Basu visited the Bamgaon tea estate, Darrang, at the request of the Deputy Commissioner, and reported an experiment now being conducted there by the manager, Mr. E. G. Wilde, in growing *balam* rice and in husking paddy by means of a steam huller.

Paddy.

The seed of the *balam* rice was obtained from Backergunge in 1899, and gave a satisfactory outturn in that year. A large area is said to have been planted again last year, but the result of the cultivation is not known. The hulling machine under trial was driven by an eight-horse-power engine, and was capable of turning out fifteen maunds of cleaned rice in a working day. For preparing *usna*, or steamed rice, coolie women were employed in steaming the paddy at the contract rate of four annas per maund of grain. The total cost of preparing *usna* rice was estimated by Mr. Basu at 11 annas 9 pies per maund of cleaned rice. The amount of breakage was not very large, being less than in the Assamese way of preparing rice.

Cheena millet.

34. Babu Hem Chandra Gossain, Sub-Deputy Collector in charge of the Baroma tahsil in Kamrup, was supplied with five seers of cheena millet seed obtained from the Dumraon Experimental Farm for experimental cultivation. Most of the seed was sown on a plot of low land unsuited for ordinary cultivation, owing to its remaining under water from May to October. The land measured five *bighas*. The object of the experiment was to find some remunerative crop which could be raised on low-flooded lands for which the Assamese raiyat has at present no use. The sowing was made in the middle of February, somewhat later than was desirable. Seed germinated well and promised a very good harvest, but unfortunately, about the end of March, the crop was invaded and almost destroyed by a species of caterpillar, for which no remedy was known. The outturn was consequently very poor. It has been reserved for a fresh trial next cold weather. A small quantity of the seed was distributed to a few cultivators, who are reported to have obtained a very good yield, but the particulars of their cultivation are not known.

Fruit-trees.

35. The citron plantation at Theriaghat was sold during the year, as the Principal Medical Officer and Sanitary Commissioner expressed an opinion that the citrons were of poor quality, and possessed no medicinal properties. The plantation started by the Deputy Commissioner, Khasi and Jaintia Hills, at Umsawriang, in the Barpani Valley, was destroyed by jungle fires last year.

Breeding bulls.

36. There are four Government breeding bulls in the province, *viz.*, at Haflong, Sylhet (Jaintia), Naharjan tea estate (Sibsagar). and Shillong. The cost of feed and keep of these animals during the year was Rs. 149-9-6, Rs. 205-3, Rs. 60, and Rs. 274-12-9, and the number of successful coverings by them 24, 41, 20, and 7, respectively. The bulls stationed at Haflong and Shillong were allowed to roam freely among the herds of cattle grazing in the fields, and probably covered many more cows than those of which a record was kept. One of the two Sitamarhi bulls belonging to the North Lakhimpur Local Board was killed by a tiger in January 1901, after serving 21 cows, which gave 11 calves.

CHAPTER VI.

AGRICULTURAL EDUCATION.

Agricultural education.

37. Arrangements have been made for translating Mr. Monahan's Manual on Mensuration and Surveying. mentioned in paragraph 32 of the preceding year's report, into Bengali and Assamese.

CHAPTER VII.

PUBLICATION OF AGRICULTURAL INFORMATION.

Weather and crop reports.

38. The weekly weather and crop reports and rainfall returns were, as usual, prepared in this office for publication in the Gazette. The preliminary and final forecasts of the mustard crop were prepared and forwarded to the Director General of Statistics.

Publication of special works.

39. A monograph on ivory carving in Assam, written by Mr. J. Donald, was published during the year. As mentioned in paragraph 34 of the preceding year's report, a Note on the cultivation of plantains in the Assam Valley was written by Mr. Basu. It is now going through the Press, and will be published shortly as Bulletin No. 7 of this Department. The revision of Bulletin No. 2 was also completed during the year. The revised edition of the Bulletin is now ready for final printing, and will be published as Bulletin No. 8. Enquiries were also made in connection with the report on field pulses in Assam, which it is proposed to issue as the first of a series of reports on the lines of Messrs. Duthie and Fuller's well-known work on the field and garden crops of the North-Western Provinces. As far as the Assam Valley was

concerned, Mr. Basu was able to collect all the necessary information. As to the rest of the province, reports were received from Cachar, Naga Hills, and Garo Hills only. These reports are generally meagre and wanting in detail. It is proposed, therefore, to confine the reports on crops to Assam Proper, where the necessary enquiries can be conducted. The report on pulse crops is under preparation, and will soon be ready for the Press. In regard to the enquiry about rice cultivation mentioned in the last annual report, the census stood in the way of further progress. A skeleton of a report on the subject was, however, prepared and submitted to Dr. Watt. It will form the basis of an enquiry by Mr. Basu next cold weather. As stated above, the enquiry will be confined for the present to the districts of Assam Proper.

Papers communicated to the *Agricultural Ledger*.

40. A descriptive note on yams by the Subdivisional Officer, Jowai, and a note by Babu Sarat Chandra Mazumdar, Extra Assistant Commissioner, Karimganj, on *agar* and its oil, were communicated to the Reporter on Economic Products through the agency of this Department for incorporation in the *Agricultural Ledger*.

Papers received from and communicated to other Provincial Departments.

41. The following agricultural bulletins and monograph were received from other Provincial Departments:

Bengal Bulletin No. 6 on mustard.
" " No. 7 on saccharum.
North-Western Provinces Bulletin No. 7 on sugarcane disease.
North-Western Provinces Bulletin No. 8 on procedure to be adopted in the systematic examination of varieties of crops.
North-Western Provinces Bulletin No. 9 on experiments on the growth of wheat and maize at the Cawnpore Experimental Farm.
North-Western Provinces Bulletin No. 10 on experiments at the Cawnpore Farm on the growth of wheat (*a*) with green manuring and (*b*) in rotation with leguminous crops.
North-Western Provinces Bulletin No. 11 on trials of an aemotor in well irrigation.
Bombay Bulletin No. 21 on manual power tillage implements.
Madras Bulletin No. 43 on sugarcane in the Godavari and Ganjam districts.
Monograph on silk fabrics produced in the North-Western Provinces and Oudh.

Copies of the annual reports of the different provincial departments were also received. Copies of the Monograph on Ivory Carving in Assam, prepared by Mr. J. Donald, I.C.S., and of the annual report of this Department, were distributed to the Departments of Land Records and Agriculture of other provinces from the Secretariat.

CHAPTER VIII.

FINAL.

Expenditure.

42. The total expenditure incurred by the Department during the year was Rs. 248,878-10-3, as detailed below, against Rs. 2,77,256-9-4 in the preceding year:

	Rs.	a.	p.
Superintendence, including raingauge charges, veterinary charges, experimental cultivation, and cost of economic collections	45,338	4	4
Settlement	16,624	12	10
Survey Detachment (exclusive of Rs. 13,60o-15-10 debitable to Imperial)	16,203	0	2
Survey schools	2,040	7	9
Kanungo establishment	1,63,861	10	3
Registration of trade	4,810	6	11
Total	2,48,878	10	3

There has been a decrease of Rs. 28,377-15-1 in the total expenditure during the year, as compared with 1899-1900, due chiefly (1) to the completion of the Cachar settlement and the consequent abolition of the Settlement Office there, and (2) to the fact that all arrears of mandals' pay having been cleared off in 1899-1900, no payment had to be made during the year on account of arrear pay of mandals. Under the heads "Superintendence, etc.," there has been a decrease of Rs. 8,121-6-3, which is accounted for mainly by the abolition of the office of the Superintendent of Land Records from the middle of 1899-1900. There was a further decrease in the expenditure on account of purchase of furniture. The expenditure on that item was high last year, when furniture was purchased for the new office and to replace that destroyed in the earthquake of 1897.

Shillong
The 1st July 1901.

F. C. HENNIKER,
Director, Department of Land Records and Agriculture, Assam.

APPENDICES A—K.

APPENDIX A.

Diary Statement of Sub-Deputy Collectors for the year 1900-1901.

Name of Sub-Deputy Collector.	District.	Subdivision.	Number of days in charge.	Number of days on tour.									Number of days at office work.	Number of days without work.						Remarks.
				In cadastral mauzas.					In non-cadastral mauzas.											
				Running check-lines.	Testing crops.	Examining mauzadar's or patwaris' papers.	Enquiring into cases.	Miscellaneous work, inspecting theodolite stations, etc.	Testing measurements.	Examining mauzadar's or patwaris' papers.	Enquiring into cases.	Miscellaneous work.	Total.		Travelling from place to place.	Gazetted holidays.	Sick.	Privilege leave.	Leave on half pay.	Leave without pay.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Babu Krishna Kumar De ...	Cachar ...	Sadr ...	274	5	...	6	34	94(a)	...	...	...	...	139	122	...	9	4	...	...	...	13	
Maulvi Muhammad Sadir ...	,, ...	,, ...	91	...	...	...	...	24	...	...	...	...	24	52	...	15	...	...	...	...	15	
Babu Gopal Chandra Das ...	,, ...	Hailakandi ...	365	...	20	4	30	42	...	...	...	...	96	173	...	89	...	7	...	...	96	
,, Purna Chandra Mitra ...	Sylhet ...	North Sylhet (Jaintia).	365	32	28	40	30	39	...	...	...	4	173	183	4	...	5	...	...	...	9	
Maulvi Nasir Uddin Ahmed ...	,, ...	Kanairghat tahsil.	363	1	10	7	25	60	...	...	...	...	103	229	7	20	...	4	...	...	31	
Babu Janaki Nath Das (I) ...	Goalpara...	Bijni tahsil ...	194	23	3	9	8	29	3	3	5	8	91	59	...	...	2	42	...	...	44	
,, Prabhat Chandra Chatterji ...	,, ...	,, ...	147(b)	...	25	...	3	12	...	...	...	4	80	67	...	...	...	...	...	...	...	
,, Ditto ditto ...	,, ...	Dhubri ...	153	...	...	...	...	...	...	...	...	23	23	98	17	15	...	...	...	...	32	
,, Dwaraka Nath Chaudhuri ...	,, ...	,, ...	132	...	...	1	1	10	3	...	...	92	107(a)	9	16	...	...	...	...	...	16	
,, Rajani Kanta Bardalai ...	Kamrup ...	Barpeta ...	216	28	...	17	...	14	13	1	...	...	73	110	2	28	...	9	...	...	39	
,, Devendra Kumar Mukherji ...	,, ...	,, ...	167	33	5	...	2	47	10	...	...	13	110	55	2	...	...	...	...	...	2	
,, Janaki Nath Das (I) ...	,, ...	Roha tahsil ...	128	11	3	2	4	42	...	...	...	6	68	59	...	1	...	...	...	...	1	
,, Bharat Chandra Das ...	,, ...	Bajali ,, ...	83	5	2	5	4	2	...	...	...	...	18	64	1	...	...	...	...	...	1	
,, Debendra Kumar Mukherji ...	,, ...	Gauhati ...	180	29	14	13	1	43	...	3	1	...	104	63	1	7	5	...	...	...	13	
,, Hem Chandra Gosvami ...	,, ...	,, ...	191	3	3	13	2	36	...	...	...	...	57	34	5	2	22	71	...	...	100	
,, Janaki Nath Das (II) ...	,, ...	,, ...	14	5	...	...	...	...	...	...	...	...	5	5	4	...	...	...	...	...	4	
,, Sarat Chandra Lahiri ...	,, ...	,, ...	99	4	1	6	6	29(a)	...	...	...	...	46	22	3	4	24	...	...	...	31	
Maulvi Muhammad Haniff ...	,, ...	,, ...	189	21	5	14	5	84	1	...	...	...	130	10	30	15	4	...	...	...	49	
Babu Rajani Kanta Bardalai ...	,, ...	Patidarrang tahsil	149	9	6	...	9	59	...	...	...	...	83	61	4	...	...	1	...	...	5	
,, Hem Chandra Gosvami ...	,, ...	Barama tahsil ...	174	3	5	5	5	78	...	...	...	...	96	65	7	4	2	...	...	...	13	
,, Bholanath Das	,, ...	Gauhati tahsil ...	365	6	...	...	2	34	...	...	9	79	130	181	...	52	...	...	...	2	54	
Maulvi Abdur Rahim ...	,, ...	Hajo tahsil ...	147	11	16	9	4	79(a)	...	...	...	...	119	24	4	...	...	...	...	...	4	
Babu Jajnesvar Das Gupta ...	Darrang ...	Mangaldai ...	365	38	...	27	1	91	...	...	...	...	160	144	...	14	7	40	...	...	61	
,, Ramakanta Barua ...	,, ...	Mangaldai tahsil.	365	13	4	4	34	102	3	...	1	...	161	173	1	22	8	...	...	...	31	
Munshi Didaruddin Ahmed ...	,, ...	Patharughat ,, ...	365	12	...	...	7	151	...	...	...	...	170	169	1	21	...	4	...	...	26	
Babu Mahendra Chandra De ...	,, ...	Tezpur ...	360(c)	20	9	37	4	67	5	6	14	16	178	160	1	8	3	...	...	...	22	
,, Radha Mohan Das ...	Nowgong...	Nowgong ...	365	17	7	20	33	103	3	...	1	63	247	93	...	17	8	...	...	...	25	
,, Harendra Kumar Ghosh ...	,, ...	,, ...	365	14	2	65	13	145	...	...	...	...	239	110	...	16	...	...	...	...	16	
,, Gunabash Gosvami ...	,, ...	Roha tahsil ...	365	20	6	21	56	176	...	...	...	...	279	86	...	...	...	...	...	...	...	
,, Pompu Singh ...	,, ...	,, ...	35(d)	...	...	...	...	29	...	...	...	...	29	2	4	...	...	...	...	...	4	
,, Bharat Chandra Das ...	,, ...	Samaguri tahsil...	183	9	6	12	10	73	1	1	2	...	114	22	1	16	1	...	...	...	17	
,, Annada Charan Bhattacharyya	Sibsagar ...	Sadr ...	94(d)	10	5	10	7	43	...	...	1	...	76	6	8	4	...	...	...	...	12	
,, Benudhar Rajkhowa ...	,, ...	,, ...	239(e)	21	2	6	5	50	...	...	...	...	84	106	...	39	...	10(f)	...	...	49	
Munshi Faizuddin Ahmed ...	,, ...	Sadr tahsil ...	365	21	5	15	16	130(a)	...	...	...	...	187	176	...	2	...	...	...	...	2	
Babu Radha Kanta Handique ...	,, ...	Namtidal tahsil...	365	30	35	25	34	65	...	...	...	...	189	139	10	12	5	10	...	...	37	
,, Sarat Chandra Lahiri ...	,, ...	Golaghat ...	144	13	1	2	10	35	...	...	2	...	63	61	2	10	8	...	...	...	20	
,, Benudhar Rajkhowa ...	,, ...	,, ...	104	11	2	3	2	57	...	...	...	...	75	22	...	7	...	...	...	...	7	
,, Lokshesvar Sarma ...	,, ...	Jorhat ...	365	44	13	9	40	99(a)	...	...	...	...	205	110	19	29	2	...	...	...	50	
,, Gopal Chandra Puri Bhuiyan.	Lakhimpur	Dibrugarh tahsil..	365	...	2	6	15	93	...	2	...	18	136	213	...	9	7	...	...	...	16	
,, Ramkumar Aditya ...	,, ...	Dibrugarh ...	365	15	10	28	24	84	5	8	3	9	186	164	...	15	...	...	...	...	15	
Maulvi Abrar Hossain ...	,, ...	North Lakhimpur	344(g)	24	...	8	10	67	2	3	7	27	148	152	1	39	4	...	...	...	44	

(a) Inclusive of days spent on census work.
(b) Exclusive of 24 days spent in the survey camp.
(c) ,, of 5 ,, ,, at Gauhati for Departmental Examination.
(d) Exclusive of 21 days at Jorhat in the survey camp.
(e) ,, of 22 ,, spent for Departmental Examination.
(f) Casual leave.
(g) Exclusive of 21 days spent for Departmental Examination.

APPENDIX B.

Diary Statement of Supervisor Kanungos and Surveyors for the year 1900-1901.

Name of Supervisor Kanungo or Surveyor.	Name of circle.	District.	Subdivision.	Number of days in charge.	Number of days on tour. In cadastral survey: Running chain lines	Trotting ditto	Examining records of previous years	Engaging extra staff	Miscellaneous work, including time-expired leave	In correctional survey: Trotting measurements	Examining results of previous work	Engaging extra staff	Miscellaneous work	Total	Number of days on office work.	Number of days on Head work. Travelling from place to place	Guarding Sadr lands	Sadr	Privilege leave	Leave on half pay	Leave without pay	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Binod Behari Chaudhuri...	Hailakandi	Cachar	Hailakandi	365	2	13	26	34	116(a)	...	...	...	...	187	127	11	38	2	...	...	...	51
Dinanath Ghosh	Saraspur	,,	,,	365	15	47	10	48	17(b)	...	...	...	...	137	170	19	39	...	...	...	...	58
Ramdoyal Chakravarty	Chatlahaor	,,	Sadr	365	2	7	7	40	65(b)	...	...	...	...	121	171	7	55	...	11	...	...	73
Gopi Charan De	Katigora	,,	,,	365	6	8	4	17	56(b)	...	...	...	...	91	201	3	61	...	9	...	...	73
Shyamacharan Guha	Udharkand	,,	,,	365	18	9	5	56	7	6	...	...	6	126	204	23	23	5	...	...	...	51
Shambhuram Das	Barakpar	,,	,,	137	...	...	...	1	17	...	...	...	...	18	92	...	25	...	2	...	...	27
Amritram Datta	,,	,,	,,	228	13	12	7	38	10(b)	...	...	...	...	80	125	...	35	...	...	...	...	35
Jogesh Chandra Miva	Sonapur	,,	,,	365	19	1	...	47	82(b)	...	...	...	...	149	151	23	42	...	...	...	...	65
Sarat Chandra Sarma	Lakhipur	,,	,,	365	5	3	22	10	44(b)	...	...	...	...	84	217	...	49	...	5	...	...	54
Hari Mohan Das	Kanairghat	Sylhet	North Sylhet	365	16	50	73	58	72	...	...	...	...	219	119	5	19	...	...	...	...	27
Jajneswar Datta	Jaintiapur	,,	,,	365	10	33	29	59	88	...	...	...	...	219	106	17	18	5	...	...	...	40
Abdus Sabur	Haripur	,,	,,	28	...	...	...	10	8	...	...	...	...	18	6	...	1	...	3	...	...	4
Sasi Kumar Kar	,,	,,	,,	337	21	43	46	56	32	...	...	...	...	200	107	9	18	3	...	...	...	30
Baradakanta Ganguly	Goalnghat	,,	,,	119	...	15	...	26	31	...	...	...	...	72	21	9	5	12	...	...	...	26
Sudarsan Bhattacharyya...	,,	,,	,,	3	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...
Fazil Baksh	,,	,,	,,	243	20	31	13	36	38	...	...	...	...	138	83	6	17	...	...	...	...	23
Ratiram Das	Bijni and Sidli...	Goalpara...	Dhubri	365	65	25	18	7	87	...	...	...	...	202	163	...	...	...	...	...	...	...
Shibnath Deka	Barpeta	Kamrup	Barpeta	365	62	37	...	4	140	5	...	...	2	250	103	12	...	...	...	...	...	...
Sheik Elias Ali	Bajali	,,	,,	365	109	9	...	27	37	...	...	...	...	202	146	2	4	12	...	...	...	17
Bhagirath Deka	Roha	,,	,,	365	105	9	15	17	48	5	3	...	2	204	118	2	...	10	31	...	...	43
Shibram Das	Beltola	,,	Gauhati	365	54	1	...	38	90	...	...	...	...	183	157	6	17	2	...	...	...	25
Hiaram Datta	Palashari	,,	,,	365	50	23	5	16	83	...	...	...	...	181	144	16	18	6	...	...	...	40
Mantaram Das	Chhaigaon	,,	,,	365	71	10	21	28	96	...	...	2	3	181	167	10	7	...	...	...	...	17
Naomal Das	Boko	,,	,,	365	40	33	22	13	45	20	7	7	19	189	110	30	3	18	75	...	...	66
Kannak Deka	Patidarang	,,	,,	335	72	37	3	36	31	...	...	...	...	174	122	12	26	12	...	...	...	49
Naranath	,,	,,	,,	30	9	3	1	4	4	...	...	...	...	18	9	3	...	...	...	...	...	3
Laghuram Das	Rangia	,,	,,	365	43	19	20	74	54	...	...	...	...	196	158	7	2	2	...	...	...	11
Santiram Das	Hajo	,,	,,	365	22	42	4	47	77	...	...	...	...	192	250	7	6	10	...	...	...	23
Jagatram Das	Barkhetri	,,	,,	365	93	49	4	8	55	...	...	...	...	209	149	...	3	3	10	...	...	16
Mahesvar Das	Tambulpur	,,	,,	184	32	19	13	2	50	...	...	...	...	116	44	6	2	9	7	...	...	24
Joyram Deka	,,	,,	,,	133	28	...	18	...	55	2	...	...	...	103	19	11	...	...	...	...	...	11
Hiraram	,,	,,	,,	48	...	...	...	...	...	...	...	...	...	...	44	4	...	...	...	...	...	4
Ramnath Datta	Barama	,,	,,	114	19	5	4	6	17	...	...	...	...	51	48	...	...	15	...	...	...	15
Batheram Das	,,	,,	,,	252	3	2	48	1	25	...	...	...	...	79	121	12	7	23	...	...	...	52
Purnananda Das	Nalbari	,,	,,	214	3	9	23	24	8	...	...	...	...	67	140	2	6	...	...	...	...	7
Ramnath Datta	,,	,,	,,	151	3	15	56	8	72	...	...	...	...	136	13	...	2	...	...	...	...	2
Chandrakanta Sarkar	Patharughat	Darrang...	Mangaldai	365	82	3	...	25	85	...	...	...	...	195	161	6	...	3	...	...	...	9
Kalagani Das	Mangaldai	,,	,,	365	42	17	...	18	73	...	...	...	...	155	100	7	3	12	10	...	...	32
Mani Ram Das	,,	,,	,,	72	9	...	2	5	26	...	...	...	...	42	26	1	1	2	...	...	...	4
Rammal Das	Kalaigaon	,,	,,	48	14	...	2	...	4	...	...	...	...	20	13	2	2	...	11	...	...	15
Jagannath Deka	,,	,,	,,	317	70	5	17	30	63	...	...	...	...	190	127	...	...	...	...	...	...	...
Ramnai Das	Berghari	,,	,,	316	60	31	...	7	87	...	...	...	...	185	122	3	...	6	...	...	...	9
Jagannath Deka	,,	,,	,,	49	7	...	18	...	5	...	...	...	...	30	7	3	2	3	4	...	...	12
Gangaram Das	Eastern	,,	Tezpur	365	54	41	22	11	94	...	...	...	...	222	114	...	14	...	13	...	...	29
Mariram Talukdar	Western	,,	,,	323	43	2	5	6	37	...	...	...	...	83	92	2	18	13	15	...	...	48
Sarveswar Sarma	,,	,,	,,	140	83	16	4	4	34	...	...	...	...	91	22	2	6	21	...	...	...	29
Mohan Chandra Bora	Silghat	Nowgong...	Nowgong...	365	84	12	10	40	62	2	1	2	...	212	139	11	3	...	...	...	...	14
Pasram Mahanta	Town	,,	,,	365	75	6	...	64	37	...	...	...	...	222	98	2	25	3	15	...	...	45
Taranath Bora	Dobaka	,,	,,	365	50	23	36	13	26	...	9	2	87	239	98	12	16	...	...	...	...	28
Gajendra Narayan Datta	Mayang	,,	,,	365	75	8	6	4	150	...	...	...	...	223	122	3	17	...	...	...	...	20
Minaram Das	Roha	,,	,,	369	115	5	21	12	71	...	...	...	...	227	127	8	9	5	...	...	...	22
Gobindaram Datta	Dhing	,,	,,	365	74	15	5	21	158	...	...	...	...	263	86	1	13	...	...	...	...	16
Sarath Chandra Bora	Gerua	,,	,,	365	53	22	4	2	122	...	...	...	...	222	127	6	9	2	...	...	...	16
Sibram Bora	Dhigua	,,	,,	350	96	10	16	2	100	...	...	...	...	224	110	24	15	3	5	...	...	25
Lakhram Chaudhuri	Northern	Sibsagar	Golaghat	365	66	15	...	8	138	...	...	...	...	227	133	...	21	4	...	...	...	15
Bhakiram Datta	Southern	,,	,,	365	54	15	...	15	119	...	...	...	...	207	132	...	5	18	...	...	...	26
Kali Ram Das	Eastern	,,	Jorhat	365	69	12	8	37	105(b)	...	...	...	...	224	132	...	2	7	...	...	...	9
Mahi Ram Das (Senior)	North-Western	,,	,,	365	48	27	...	67	36	2	...	...	...	220	145	...	...	...	...	...	...	...
Ditto (Junior)	South-Western	,,	,,	365	52	12	23	33	91(b)	...	...	...	...	211	130	9	6	7	2	...	...	24
Sib Nath Sarma	Majuli	,,	,,	365	91	6	22	3	90(b)	1	...	3	1	207	143	15	...	...	...	...	...	15
Durga Ram Datta	Eastern	,,	Sadr	365	63	44	...	4	85	...	...	...	...	192	122	...	38	...	4	...	...	42
Gobinda Nath Roy	Central	,,	,,	365	77	33	...	16	50	...	...	...	59	224	114	...	27	...	...	...	...	27
Jiu Ram Das	Western	,,	,,	341	38	26	3	31	76	...	...	...	...	176	131	7	16	2	...	...	15	34
Maheswar Das	Dibrugarh	Lakhimpur	Dibrugarh	155	14	...	2	21	26	...	...	...	...	73	75	...	7	...	...	...	...	7
Shambhu Ram Das	,,	,,	,,	210	...	9	4	12	58	...	...	...	...	83	99	18	9	1	...	...	...	28
Lakshmi Kanta Das	Chabua	,,	,,	365	25	22	14	159	...	...	...	...	...	241	90	4	27	3	...	...	...	34
Parag Ram Barkakoar	Tinsukia	,,	,,	365	11	13	22	30	122	...	...	8	...	206	107	11	20	1	16	...	...	57
Bhola Ram Das	North Lakhimpur.	,,	North Lakhimpur.	247	55	...	42	5	20	30	7	2	6	147	81	4	15	...	...	...	...	19
Kica Ram Das	,,	,,	,,	118	22	19	5	9	30	4	3	1	2	95	17	4	2	...	...	...	...	6
Samudra Narayan Das	.....	Kamrup	Gauhati	365	...	...	...	...	2	7	...	...	90	101	224	15	15	...	...	...	...	40
Muzaffar Ali	.....	Lakhimpur	Dibrugarh	351	...	...	...	...	...	45	...	7	94	146	176	3	16	16	...	...	...	35
Chandra Kumar Chakravarty.	.....	,,	,,	14	...	...	...	...	...	10	...	...	...	10	2	2	...	...	...	...	...	2

(a) Preparation of statements for Annual Administration Report of the Agriculture Settlement and Assistant Settlement.
(b) Inclusive of days spent on census work.

APPENDIX C.

Work Statement of District and Subdivisional Officers for the year 1900-1901.

Name of Officer.	District.	Subdivision.	Area cadastrally surveyed.														Area not cadastrally surveyed.						Area of concealed cultivation discovered (in acres).	Area found wrongly classified.		
			Number of supervisor kanungos.	Total number of supervisor kanungos whose work was inspected.	Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris.		Testing by check-lines.						Testing without check-lines.		Total number of mandals or patwaris.	Number of mandals or patwaris		Total area tested as returned by manzadars (in acres).	Total area as found on remeasurement (in acres.)	Percentage of errors in manzadars' papers.		*Basti* shown as		
							Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *kalars*.	Number of offsets.	Total length of lines (in miles).	Area of fluctuating cultivation in jurisdiction (in acres).	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested (in acres).		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Fartingait* (acres).	*Rupit* shown as *fartingait* (acres).
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
PART I.—Deputy Commissioners.																										
D. H. Lees, Esq.	Sylhet ...	.....	4	4	...	46	37	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
F. E. Jackson, Esq.	Goalpara ...	.....	1	1	2	28	1	1	2	12	14	1·00	1,054	0·60	...	...	...	...	...	...	...	...	...	...	...	...
Captain P. R. T. Gurdon	Kamrup ...	.....	14	...	271	271	102	...	...	...	...	...	...	...	...	...	27	5	...	...	...	...	...	...	...	...
„ H. W. G. Cole	Darrang ...	.....	6	3	2	117	36	2	3	25	36	1·15	10,907	0·07	...	...	23	...	...	...	...	...	...	...	...	...
J. F. Gruning, Esq.	Nowgong ...	.....	8	3	10	162	110	24	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...
J. C. Arbuthnott, Esq., C.I.E. ...	Sibsagar ...	.....	9	...	...	195	8	...	...	...	...	...	...	...	...	...	8	...	...	...	...	...	1·00	...	...	...
H. C. Barnes, Esq.	„ ...	.....	9	...	...		7	...	...	...	...	...	...	...	...	...		...	...	...	...	...	...	...	...	...
W. J. Reid, Esq.	Lakhimpur ...	.....	4	2	...	62	10	...	...	...	...	...	...	...	...	...	46	20	...	...	...	...	...	...	...	...
PART II.—Subdivisional Officers, Assistant Commissioners, and Extra Assistant Commissioners.																										
Munshi Muhib Uddin Ahmed, Extra Assistant Commissioner.	Kamrup ...	Barpeta ...	3	...	2	62	40	2	...	...	...	...	...	...	20	24·36	8	5	2	54·76	54·57	0·35	...	...	...	...
T. Emerson, Esq., Assistant Commissioner.	„ ...	Gauhati ...	11	...	1	211	71	1	...	...	...	...	...	...	8	7·44	19	7	...	...	...	...	...	...	...	...
F. W. Strong, Esq. ditto ...	Darrang ...	Mangaldai ...	4	4	8	83	83	5	8	105	127	3·42	7,183	0·30	...	...	2	2	...	...	...	...	...	...	...	...
Babu Krishna Chandra Chaudhuri, Extra Assistant Commissioner.	„ ...	„ ...			3			2	4	64	44	2·05		1·17	...	...	2	2	...	...	...	...	...	...	...	...
L. O. Clarke, Esq., Assistant Commissioner.	Sibsagar ...	Jorhat ...	4	1	2	72	36	1	2	19	48	1·04	7,272	0·09	6	9	5	3	...	...	...	...	...	...	...	...
J. Donald, Esq., ditto ...	„ ...	Golaghat ...	2	1	3	52	6	2	3	32	48	1·19	5,512	0·13	...	...	3	1	...	...	...	...	...	...	...	...
H. C. Barnes, Esq., ditto ...	Lakhimpur ...	Dibrugarh ...	3	1	1	62	...	1	1	30	22	0·99	1,422	0·05	...	...	46	...	...	...	...	...	...	...	...	...

APPENDIX D.

Work Statement of Sub-Deputy Collectors for the year 1900-1901.

Name of Sub-Deputy Collector.	District.	Subdivision or tahsil.	Area cadastrally surveyed.											Area not cadastrally surveyed.						Percentage of errors in outstanders' papers.	Area (in acres) of concealed cultivation discovered.	Area found wrongly classified.		
					Number of mandals or patwaris		Testing by check-lines.					Testing without check-lines.		Total number of mandals or patwaris.	Number of mandals or patwaris		Total area (in acres) as returned by mandals.	Total area (in acres) as found on re-measurement.				Rent shown as	
			Number of villages tested.	Total number of mandals or patwaris.	Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of offsets.	Number of checks.	Total length of lines (in miles).	Area of dissenting cultivation in pattadars (in acres).	Number of linear miles per square mile of dissenting cultivation.	Number of fields tested.	Area tested (in acres).		Whose papers were examined.	Whose field work was tested.					*Rent* (acres).	*Fasrigani* (acres).	*Rent* shown as *fasrigani* (acres).
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Babu Gopal Chandra Das ...	Cachar ...	Hailakandi ...	14	29	4	10	...	...	...	...	...	...	1,511	492	...	...	...	...	...	...	...	...	...	...
„ Krishna Kumar De ...	„ ...	Sadr ...	15	68	6	7	175(a)	42	36	3·00	581	5·04	...	...	...	...	...	...	...	...	...	...	...	...
Maulvi Muhammad Sadir ...	„ ...	„ ...	...	68	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Babu Purna Chandra Mitra ...	Sylhet ...	North Sylhet (Jaintia)	401	46	46	37	41(a)	356	283	21·56	2,362	5·7	2,106	2,158	...	...	...	...	...	...	...	...	...	...
Maulvi Nasir Uddin Ahmed ...	„ ...	Kanaighat tahsil ...	68	16	16	8	3(a)	33	41	1·06	671	1·00	1,872	765	...	...	...	...	...	...	...	...	...	...
Babu Prabhat Chandra Chatterji ...	Goalpara ...	Dhubri ...	...	...	...	...	...	...	...	...	...	...	...	...	6	5	...	...	...	...	...	...	...	...
„ ditto ditto ...	„ ...	Bijni ...	6	12	4	4	10(a)	109	262	3·70	2,186	1·4	134	130	...	...	...	...	...	...	...	...	...	...
„ Dwaraka Nath Chaudhuri ...	„ ...	Dhubri ...	...	13	3	...	...	...	...	...	...	...	...	...	6	5	2	49·52	42·66	3·77	...	4·51	...	...
„ Janaki Nath Das (I) ...	„ ...	Bijni ...	18	13	13	11	33(a)	391	723	53·13	4,102	3·71	853	336	3	3	2	70·00	72·00	3·00	2	...	2	...
„ ditto ...	Kamrup ...	Rowa ...	20	17	17	6	10(a)	110	253	4·67	2,860	0·81	121	105	1	1	...	...	...	...	1	...	...	...
„ Rajani Kanta Bardalai ...	„ ...	Barpeta ...	33	42	41	30	36	480	846	20·60	9,903	1·33	40	140	3	6	6	106·00	106·00	0·08	...	...	...	...
„ Debendra Kumar Mukherji ...	„ ...	„ ...	37	45	7	30	24(a)	311	900	12·90	9,132	1·67	1,848	...	7	1	3	512·4	509·00	0·67	3·89	...	...	30·7
„ Bharat Chandra Das ...	„ ...	Bajali tahsil ...	8	20	19	5	5	72	72	2·53	2,896	0·76	154	67	...	...	...	...	...	...	...	...	...	...
„ Hem Chandra Goswami ...	„ ...	Gauhati ...	25	141	34	...	...	...	...	...	...	...	997	...	...	...	...	...	...	...	...	...	...	...
Maulvi Muhammad Hanif ...	„ ...	„ ...	25	44	36	25	26(a)	300	534	12·18	4,739	1·94	537	2,001	2	1	1	...	43·03	...	...	...	...	...
Babu Sarat Chandra Lahiri ...	„ ...	„	41	39	20	4	4(a)	61	63	2·45	4,739	1·94	537	2,001	2	1	1	...	43·03	...	...	...	...	...
„ Janaki Nath Das (II) ...	„ ...	„	5	...	...	5	6(a)	64	116	3·05	4,659	0·41	...	...	...	...	...	5·22	5·76	1·00	...	...	...	...
„ Debendra Kumar Mukherji ...	„ ...	„	47	...	38	26	19	227	459	11·10	7,092	1·00	945	353	12	6	5	26·04	25·61	4·90	3·50	...	...	...
„ Bhola Nath Das ...	„ ...	Gauhati tahsil ...	6	13	13	6	8(a)	96	174	4·83	1,643	2·56	...	...	5	5	...	...	...	...	...	...	...	...
„ Hem Chandra Goswami ...	„ ...	Barama tahsil ...	19	18	18	13	6(a)	89	116	4·61	3,709	1·05	...	...	...	...	...	...	...	...	...	...	...	...
„ Rajani Kanta Bardalai ...	„ ...	Palasbarrag tahsil ...	8	20	20	14	8	88	88	3·31	1,370	1·46	616	552	...	...	...	...	...	...	...	...	...	...
Maulvi Abdur Rahim ...	„ ...	Hajo tahsil ...	45	37	32	30	25(a)	177	231	5·84	6,272	0·61	2,487	1,951	...	...	...	...	...	...	...	...	...	...
							2(c)	29	33	0·91														
Babu Mahendra Chandra De ...	Darrang ...	Tezpur ...	53	34	34	30	24(a)	293	393	11·43	5,774	2·02	229	183	21	20	3	...	83·57	...	0·56	...	3·25	3·57
							1(c)	5	11	0·24														
							(d)	...	...	12·80														
							(e)	...	...	0·25														
„ Jajeswar Das Gosain ...	„ ...	Mangaldai ...	34	40	42	40	37(a)	708	1,304	35·89	2,476	6·6	2,019	1,750	...	...	...	...	...	...	...	...	...	...
Munshi Dilar Uddin Ahmed ...	„ ...	Patharughat tahsil ...	12	20	20	10	23(a)	206	341	11·73	2,216	2·76	182	254	...	...	...	...	...	...	...	...	...	...
Babu Rama Kanta Barua ...	„ ...	Mangaldai tahsil ...	35	14	14	12	16(a)	183	222	5·93	931	4·87	803	473	3	3	1	45·85	46·23	1·44	...	...	2·86	...
„ Gauahar Goswami ...	Nowgong ...	Rowa tahsil ...	25	23	23	16	3(a)	43	82	1·57														
							25	303	523	12·01	2,516	2·33	587	612	...	...	...	...	...	...	...	...	...	...
„ Radha Mohan Das ...	„ ...	Nowgong ...	62	66	66	25	16(a)	224	268	6·45	7,145	2·05	1,600	900	7	7	3	...	...	...	...	...	...	...
							6(b)	85	157	2·91														
							2(c)	11	25	1·70														
„ Pompi Singh an special duty ...	...	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ Harendra Kumar Ghosh ...	Nowgong ...	Nowgong ...	96	57	57	24	16(a)	297	451	12·61	12,218	6·60	457	710	...	...	...	...	...	...	...	...	...	...
„ Bharat Chandra Das ...	„ ...	Samaguri tahsil ...	25	18	12	7	18	141	188	5·00								356·96	356·44	...	...	18·00	...	...
							6(a)	56	143	3·05														
„ Sarat Chandra Lahiri ...	Sibsagar ...	Golaghat ...	19	53	34	13	35(d)	...	...	3·88	5,811	3·18	73	79	...	...	...	...	...	...	...	...	...	...
							1(f)	12	19	0·21														
„ Brajadhir Rajkhowa ...	„ ...	„ ...	34	53	32	22	11(a)	178	262	6·27	8,319	0·58	162	597	...	...	...	...	...	...	25·70	...	1·35	...
							32(a)	475	738	14·70														
							2(b)	25	125	3·23														
„ Lakheswar Saikia ...	„ ...	Jorhat ...	53	72	72	32	1(c)	28	50	1·31	7,272	1·50	745	1,118	3	3	...	...	...	...	3·50	0·05	15·15	46·42
							13(d)	...	...	1·80														
							24(e)	...	...	3·18														
„ Brindhar Rajkhowa ...	„ ...	Sadr ...	30	35	24	14	10(a)	129	199	6·71	3,832	1·50	...	...	...	...	...	...	...	...	...	...	...	...
							3(d)	...	...	1·12														
							13(e)	...	...	20·23														
„ Ananda Charan Bhattacharyya ...	„ ...	„ ...	30	33	33	19	18(a)	240	382	7·00	2,832	0·49	189	218	2	1	1	...	...	...	...	...	...	...
Munshi Fair Uddin Ahmed ...	„ ...	Sibsagar sadr tahsil ...	28	16	16	13	24(a)	242	321	12·03	922	7·53	...	...										
							5(d)	...	...	1·64														
							13(e)	135	231	6·73														
Babu Radha Kanta Handique ...	„ ...	Namtideal tahsil ...	31	15	13	12	4(a)	25	53	1·39	2,056	3·07	41	25·30	...	...	...	...	...	...	3·39	...	...	...
							36(c)	...	...	0·74														
„ Ram Kumar Aditya ...	Lakhimpur ...	Dibrugarh ...	15	14	14	11	13(a)	48	105	4·84	2,183	6·14	14	33	42	20	3	67	68	0·90	...	...	...	...
							18(c)	...	...	6·06														
„ Gopal Chandra Pori Bhuyan ...	„ ...	Dibrugarh tahsil ...	...	25	12	...	...	...	...	...	...	...	7	509·83	4	2	...	...	...	...	...	...	...	...
							28(a)	221	384	10·66														
Maulvi Abar Hossain ...	„ ...	North Lakhimpur ...	64	20	18	11	1(c)	2	21	0·39	2,530	3·75	1,322	636	13	3	1	57·3	80·38	22·31	4·83	...	0·34	74·18
							11(d)	15	21	1·23														
							3(e)	...	1	0·57														

(a) Independent check-lines in cadastral area.
(b) Ditto in extension survey area.
(c) Check-lines run over the lines of subordinate officers in cadastral area.
(d) Lines run in surveying waste land grants.
(e) Ditto in testing demarcation of special estates.
(f) Check-lines run over the lines of subordinate officers in extension survey area.
(g) Lines run in surveying railway lands.

APPENDIX E.

Work Statement of Supervisor Kanungos and Surveyors for the year 1900-1901.

Name of Supervisor Kanungo or Surveyor.	Circle.	District.	Subdivision.	Area cadastrally surveyed.														Remarks.
				Number of villages tested.	Total number of mauzahs or patharis.	Number of mauzahs or patharis: Whose papers were examined.	Whose field work was tested.	Testing by check-Amins. Number of Amins employed.	Number of hours.	Number of miles.	Total length of Jhaa (in miles).	Area of fluctuating cultivation in Jumbooram (in acres).	Number of Amins' miles per square mile of cultivation (in acres).	Testing without check-Amins. Number of fields tested.	Area tested (in acres).	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Bivode Behari Chaudhuri ...	... Hailakandi ...	Cachar ...	Hailakandi ...	54	15	15	15	4	26	31	1·04	63	12·56	2,982	7,645	
Dinanath Ghosh ...	... Sarasapur ...	,, ...	,, ...	120	14	14	14	31(a)	92	99	5·19	16	207·60	3,683	6,113	
Ramdoyal Chakravarti ...	... Chatlahaor ...	,, ...	Sadr ...	43	10	10	6	4(a)	4	1	0·25	28	5·71	258	1,022	
Gopi Charan De ...	... Natigora ...	,, ...	,, ...	46	16	10	10	37(a)	93	216	5·23	58	60·86	1,525	3,615	
Syama Charan Guha ...	... Udharband ...	,, ...	,, ...	55	12	8	8	126(a)	154	194	28·70	65	184·12	2,696	3,965	
Shambhunath Das ...	... Barakpar ...	,, ...	,, ...	...	8	...	...	...	...	...	...	...	...	...	...	
Amritram Datta (Offg.) ...	... ,, ...	,, ...	,, ...	45	8	8	5	39(a)	207	328	6·65	32	133·00	1,507	1,483	
Jogesh Chandra Misra ...	... Sonapur ...	,, ...	,, ...	18	11	...	6	105(a)	62	258	20·69	93	73·56	173	152	
Sarat Chandra Sarma ...	... Lakhipur ...	,, ...	,, ...	80	11	11	8	13(a)	173	60	3·17	109	18·69	4,905	5,580	
Hari Mohan Das ...	... Kanairghat ...	Sylhet ...	North Sylhet (Jaintia).	180	23	23	13	33(a)	301	378	15·18	307	19·03	14,015	27,183	
Jajneswar Datta ...	... Jaintiapur ...	,, ...	,, ...	127	9	9	9	17(a)	168	316	10·06	692	9·31	9,107	21,537	
Sasi Kumar Kar ...	... Haripur ...	,, ...	,, ...	236	23	13	23	29(a)	187	263	15·25	494	19·77	9,835	30,009	
Barada Kanta Baruah (Offg.) ...	... Gowainghat ...	,, ...	,, ...	105	12	12	12	...	...	...	...	...	...	2,693	12,620	
Sudarsan Bhattacharyya ...	... ,, ...	,, ...	,, ...	...	12	...	...	...	...	...	...	...	...	...	...	
Fazil Baksh (Offg.) ...	... ,, ...	,, ...	,, ...	105	11	11	11	29(a)	155	362	13·71	661	13·31	2,825	13,923	
Rati Ram Das ...	... Bijni and Sidli ...	Goalpara ...	Dhubri ...	85	22	22	22	127(a)	1,368	2,203	73·60	5,697	5·47	937	10,974	
Shibnath Deka ...	... Barpeta ...	Kamrup ...	Barpeta ...	109	19	19	19	58(a)	923	1,764	60·76	3,796	16·31	3,901	3,794	
								2(c)	8	20	0·35					
Elias Ali	... Bajali ...	,, ...	,, ...	165	22	22	22	115(a)	1,301	2,249	59·38	3,431	11·06	6,613	3,556	
Bhagirath Das ...	... Rolta ...	,, ...	,, ...	60	21	21	21	114(a)	1,261	2,573	61·23	5,571	7·69	3,675	5,082	
Sita Ram Das (Offg.) ...	... ,, ...	,, ...	,, ...	10	21	18	8	11(a)	128	303	5·73			253	392	
Sibram Das ...	... Beltola ...	,, ...	Gauhati ...	78	23	13	13	30(a)	391	583	17·50	1,042	11·82	2,741	1,702	
Mantan Ram Das ...	... Chhaigaon ...	,, ...	,, ...	59	20	20	20	44(a)	520	872	25·09	2,865	5·61	1,761	239	
								22(a)	273	455	20·61					
Naemal Das	... Boko ...	,, ...	,, ...	26	17	17	17	3(b)	32	86	1·93	1,814	6·78	1,309	602	
								2(c)	18	33	0·78					
Tita Ram Datta ...	... Palashari ...	,, ...	,, ...	62	22	22	22	39(a)	739	847	21·91	2,402	5·84	9,563	1,168	
Kamath Deka ...	... Patidarrang ...	,, ...	,, ...	127	20	20	20	41(a)	363	572	15·21			6,517	3,496	
Naranath Deka (Offg.) ...	... ,, ...	,, ...	,, ...	14	20	2	7	5(a)	80	102	2·12	1,389	7·56	615	340	
Raghunath Das ...	... Rangia ...	,, ...	,, ...	72	26	26	26	81(a)	848	1,149	31·53	2,482	9·03	1,635	6,598	
								7(c)	144	203	3·36					
Santiram Das	... Hajo ...	,, ...	,, ...	110	21	21	21	36(a)	531	498	11·60	2,456	3·79	3,698	4,235	
Jagatram Das	... Barkhetri ...	,, ...	,, ...	77	17	17	17	65(a)	823	1,676	13·90	3,403	5·20	5,854	1,069	
Ramnath Datta ...	... Barama ...	,, ...	,, ...	21	18	18	18	14(a)	737	133	5·08			1,747	116	
Ratnaram Das ...	... ,, ...	,, ...	,, ...	36	18	18	18	7(a)	80	48	2·85	2,709	2·70	283	28	
Purnananda Das (Offg.) ...	... Naihari ...	,, ...	,, ...	45	19	19	19	3(a)	22	38	1·08			2,178	1,243	
Ramnath Datta ...	... ,, ...	,, ...	,, ...	41	19	19	9	7(a)	53	130	2·07	525	3·84	3,747	2,677	
Joyram Deka	... Tambulpur ...	,, ...	,, ...	53	18	18	18	31(a)	353	601	19·12			2,247	3·2 5	
Maheswar Das	... ,, ...	,, ...	,, ...	52	18	18	13	43(a)	256	518	19·10	2,255	10·84	1,024	1,027	
Chandra Kanta Sarkar ...	... Patharighat ...	Darrang ...	Mangaldai ...	88	20	20	20	95(a)	1,021	1,747	48·00	2,793	11·31	2,796	2,138	
Kalaram Das ...	... Mangaldai ...	,, ...	,, ...	67	23	23	23	23(a)	414	779	25·18	1,768	14·64	1,310	801	
Dhaniram Das (Offg.) ...	... ,, ...	,, ...	,, ...	8		23	4	7(a)	103	155	3·84			87	111	
								72(a)	1,155	2,906	32·30					
Jagannath Deka ...	... Kalaigaon ...	,, ...	,, ...	96	24	24	24	1(c)	6	26	0·04	1,550	15·21	6,667	5,752	
								6(d)	33	65	2·33					
Rammal Das	... ,, ...	,, ...	,, ...	11		4	4	5(e)	68	84	1·95			365	392	
Ramrai Das	... Bengbari ...	,, ...	,, ...	123	16	16	16	73(a)	961	1,233	33·00			5,928	9,935	
								29(c)	103	222	6·72	1,631	17·66			
Jagannath Deka ...	... ,, ...	,, ...	,, ...	12	16	...	5	9(e)	102	154	4·32			...	...	
Gangaram Das	... Eastern ...	,, ...	Tezpur ...	83	14	14	14	80(a)	713	1,249	34·08	1,602	14·38	4,227	4,049	
								3(c)	24	67	1·91					
Manuram Talukdar ...	... Western ...	,, ...	,, ...	48	20	20	20	33(a)	227	571	19·33	2,121	12·25	1,248	1,283	
Sarveswar Sarma ...	... ,, ...	,, ...	,, ...	54	20	20	16	35(a)	463	710	21·29			457	493	
Mohan Chandra Bora ...	... Silghat ...	Nowgong ...	Nowgong ...	122	23	...	23	122(a)	1,133	2,106	48·15	2,352	13·08	3,278	1,434	
								21(b)	213	419	9·42					
Duaram Mahanta ...	... Town ...	,, ...	,, ...	115	31	31	31	74(a)	960	1,423	36·20	3,917	5·95	12,064	7,871	
								77(a)	928	1,110	42·57					
Para Nath Bora	... Deboka ...	,, ...	,, ...	125	18	18	18	4(b)	27	49	3·48	1,234	23·88	12,720	14,520	
								48(a)	434	768	23·98					
Rajendra Narayan Datta ...	... Mayang ...	,, ...	,, ...	76	11	11	11	2(b)	15	34	1·12	1,478	10·86	6,585	3,326	
Himaram Das	... Roha ...	,, ...	,, ...	171	23	23	23	103(a)	1,047	1,821	47·41	3,516	5·63	3,752	2,797	
Jobindaram Datta ...	... Dhing ...	,, ...	,, ...	99	19	19	19	100(a)	1,172	2,157	61·05	3,982	10·35	6,406	5,082	
								5(b)	61	122	3·15					
Nath Chandra Bora ...	... Gerua ...	Nowgong ...	Nowgong ...	103	17	17	17	122(a)	1,885	1,900	39·23					
								3(b)	23	20	1·11	3,937	10·23	2,264	2,759	
								4(c)	48	71	2·58					
Ishiram Bora	... Ghugua ...	,, ...	,, ...	143	21	21	21	151(a)	1,834	3,732	90·14					
								8(c)	73	48	1·11	3,215	11·20	7,939	9,042	

Lalitram Chaudhuri	Northern ...	Sibsagar ..	Golaghat ...	52	26	26	26	30(a)	239	379	12·86	2,436	7·77	2,008	5,291
								41(b)	254	485	16·70				
Bhakatram Datta	Southern ...	,, ...	,, ...	82	21	21	21	41(a)	514	554	19·49	1,075	23·64	3,239	1,704
								14(b)	112	194	4·95				
								6(c)	113	133	4·10				
								18(d)	...	...	10·95				
Katiram Das	Eastern ...	,, ...	Jorhat ...	62	19	19	19	69(a)	687	1,324	29·45	1,710	14·61	583	1,699
								20(b)	175	339	5·12				
								1(c)	20	36	0·47				
Mohiram Das (senior)	North-Western ..	,, ...	,, ...	43	23	23	23	29(a)	396	1,112	18·30	1,668	11·01	2,919	1,999
								17(b)	224	445	10·40				
,, (junior)	South-Western ...	,, ...	,, ...	34	17	17	17	60(a)	683	1,032	30·73	1,345	14·62	1,354	1,227
Shibnath Sarma	Majuli ...	,, ...	,, ...	113	19	19	19	179(a)	1,783	3,149	72·46	4,550	10·34	1,088	125
								2(c)	19	48	1·04				
Durgaram Datta	Eastern ...	,, ...	Sadr ...	111	25	25	25	68(a)	695	1,131	31·29	1,755	11·64	2,341	3,290
Jiuram Das	Western ...	,, ...	,, ...	98	24	24	24	58(a)	628	1,295	32·03	1,684	12·17	5,451	3,950
Gobinda Nath Roy	Central ...	,, ...	,, ...	101	21	21	21	75(a)	757	935	43·10	1,769	15·51	1,486	101
Mahesvar Das	Dibrugarh ...	Lakhimpur ...	Dibrugarh ...	39	15	15	15	28(a)	289	431	11·77	239	31·52	...	...
Shambhuram Das	,, ...	,, ...	,, ...	38	...	13	13	...	...	...	...	...	...	2,448	3,672
Lakhikanta Das	Chabua ...	,, ...	,, ...	29	14	14	14	40(a)	374	780	18·89	1,183	10·26	1,473	1,357
Parsuram Bar Thakur	Tinsukia ...	,, ...	,, ...	24	6	6	6	7(a)	76	127	40·32	259	99·63	1,057	867
Bhabiram Das (Offg.)	Lakhimpur ...	,, ...	North Lakhimpur	52	20	20	20	52(a)	527	1,170	19·25	2,530	8·69	1,170	...
Kinaram Das (,,)	,, ...	,, ...	,, ...	46		20	20	46(a)	354	806	15·13			1,497	...
Samudra Narayan Das	.....	Kamrup ...	Gauhati ...	6	211	...	9	...	...	...	...	...	...	124	345
Muzaffar Ali	.....	Lakhimpur ...	Dibrugarh ...	...	...	...	...	...	...	...	...	...	...	...	...
Chandra Kumar Chakravarti (Offg.)															

(a) Independent check-lines in cadastral area.
(b) ,, ,, in extension survey area.
(c) Check-lines run with superior officers in cadastral area.
(d) Lines run in erecting kanungos' *dāgs*.

APPENDIX F.

Work Statement of Tahsildars for the year 1900-1901.

(Not Sub-Deputy Collectors.)

Name of Tahsildar.	Name of tahsil.	District.	Subdivision.	Area cadastrally surveyed.													Area not cadastrally surveyed.						Area of concealed cultivation discovered (in acres).	Area (in acres) found wrongly classified.		
				Number of villages tested.	Total number of mandals or patwaris.	Number of mandals or patwaris.		Testing by check-lines.						Testing without check-lines.		Total number of mandals or patwaris.	Number of mandals or patwaris		Total area as returned by mauzadars (in acres).	Total area as found on remeasurement (in acres).	Percentage of errors in mauzadars' papers.		*Basti* shown as	
						Whose papers were examined.	Whose field work was tested.	Number of lines.	Number of *kutcheries*.	Number of offsets.	Total length of lines in miles.	Area of fluctuating cultivation in jurisdiction (in acres).	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested (in acres).		Whose papers were examined.	Whose field work was tested.					*Rupit* (acres).	*Faringati* (acres).	*Rupit* shown as *faringati* (acres).
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Ratan Ali Sarkar	Gowaingbat (Jaintia)	Sylhet ...	North Sylhet ...	15	30	15	10	9	30	58	3·06	1,691	1·16	250	30	...	...	...	...	...	...	...	...	...	...
Ratna Kanta Barua	Bajali ...	Kamrup ...	Barpeta ...	20	20	16	15	14	181	252	8·30	2,896	1·84	23	19	...	...	...	...	...	...	...	...	...	...
Syam Lal Chaudhuri	Palasbari ...	,, ...	Gauhati ...	11	7	4	7	3	28	50	1·50	2,402	0·39	461	287	1	1	1	109·23	110·41	...	1·17	...	...	...
Kali Ram ,, ...	Chhaigaon ...	,, ...	,, ...	5	3	...	3	9	190	197	4·40	123	2·51	...	...	...	...	...	...	...	...	...	...	...	...
Banga Chandra Chaudhuri ...	Patidarrang ...	,, ...	,, ...	3	20	11	3	...	...	...	...	...	...	57	70	...	...	...	...	...	...	...	...	...	...
Ditto	Hajo ...	,, ...	,, ...	9	30	17	7	2	25	54	0·75	5,659	0·08	259	323	...	...	...	...	...	...	...	...	...	...
Ditto	Nalbari ...	,, ...	,, ...	5	19	19	3	...	...	...	...	...	...	78	102	...	...	...	...	...	...	...	...	...	...
Joy Ram Bhuiyan	Tambulpur ...	,, ...	,, ...	29	18	18	11	9	110	169	4·66	2,255	1·32	577	351	2	2	1	975·12	32·12	...	1·7	...	3·34	2·53
Ghanakanta Chaliha	Kalaigaon ...	Darrang ...	Mangaldai ...	30	24	24	14	30	350	320	12·00	1,550	5·04	1,120	1,280	...	...	...	...	...	...	...	...	...	...
Rabi Chandra Sarma	Tezpur ...	,, ...	Tezpur ...	25	10	10	10	1	21	19	0·81	1,135	0·46	625	620	5	5	3	390·74	396·03	1·35	...	...	...	...
Ganga Nath Sarma	Chutia ...	,, ...	,, ...	4	12	12	3	4	43	72	2·28	1,112	1·31	...	...	4	4	...	...	...	...	...	...	...	...
Sasti Ram Hazarika	Nowgong ...	Nowgong ...	Nowgong ...	...	17	...	...	...	...	...	...	...	...	25	49	...	...	...	...	...	...	...	...	...	...
Dandadhar Barua	Golaghat ...	Sibsagar ...	Golaghat ...	5	14	14	4	3	31	65	1·42	861	1·05	163	242	...	...	...	...	...	...	...	...	...	...
Guruprasad Kakati	Athgaon ...	,, ...	,, ...	2	12	12	2	4	49	67	1·84	596	1·97	...	...	...	...	...	...	...	...	...	...	...	...
Bistu Ram Barua	Jorhat ...	,, ...	Jorhat ...	6	17	16	5	6	53	83	1·66	856	1·24	...	...	...	...	...	...	...	...	...	...	...	...
Total	.....	.....	.....	166	253	188	97	99	1,111	1,598	42·68	21,136	1·29	3,638	3,373	12	12	5	1,475·09	538·56	...	2·87	...	3·34	2·53

APPENDIX G.

Work Statement of Mauzadars and Tahsil muharrirs for the year 1900-1901.

District.	Subdivision.	Total number of mauzadars and muharirs who did any testing.	Area cadastrally surveyed.												Area not cadastrally surveyed.						Area of concealed cultivation discovered.	Area found wrongly classified.			Remarks.
			Number of villages tested.	Total number of mandals.	Number of mandals.		Testing by check-lines.					Testing without check-lines.		Total number of mandals.	Number of mandals						*Basti* shown as			
					Whose papers were examined.	Whose field work was tested.	Total length of lines (in miles).	Number of *kutcheries*.	Number of offsets.	Area of fluctuating cultivation in jurisdiction (in acres).	Number of linear miles per square mile of fluctuating cultivation.	Number of fields tested.	Area tested (in acres).		Whose papers were examined.	Whose field work was tested.	Total area (in acres) as returned by mauzadars.	Total area (in acres) found on remeasurement.	Percentage of errors in mauzadars' papers.		*Rupit* (acres).	*Faringati* (acres.)	*Rupit* shown as *faringati* (acres).	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Goalpara	Dhubri	2	92	8	8	8	17	132	244	6·01	1,724	2·23	400	1,100	...	...	...	...	...	...	...	...	...	...	
Kamrup	Barpeta	6	32	25	21	16	36	409	718	21·21	6,243	2·17	342	302	3	3	3	756	754	0·26	...	...	...	8·72	
,, ...	Gauhati	1	3	5	5	2	6	38	60	1·48	484	1·97	80	...	...	1	...	...	...	...	...	...	...	...	
Darrang	Mangaldai	11	58	26	22	20	69	601	1,155	34·06	1,648	23·22	1,834	1,401	...	...	...	4·67	4·68	0·21	...	...	...	...	
,, ...	Tezpur	3	5	10	10	10	8	101	178	5·72	1,191	3·07	1,270	1,413	12	11	6	...	...	...	...	...	...	...	
Nowgong	Nowgong	18	...	124	53	30	44	576	875	22·87	4,119	3·55	2,646	3,752	15	12	12	579·01	989·03	70·81	14·55	3·96	10·90	...	
Sibsagar	.....	...																							
Golaghat	.....	...	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Jorhat	.....	...																							
Sibsagar	.....	...																							
Dibrugarh	.....	10	5	29	6	2	2	20	56	0·70	259	1·75	35	57·56	45	19	16	915·35	940·12	2·82	...	...	9·91	9·03	
North Lakhimpur	.....	1	1	20	1	1	2	15	19	0·45	24	11·03	16	24·14	13	1	1	21	21	...	...	...	...	...	
Total	.....	52	196	247	126	89	184	1,892	3,305	92·80	13,692	24·51	6,623	8,049·70	89	47	39	2,276·03	2,708·83	19·01	14·55	3·96	20·81	17·75	

* Information not received.

APPENDIX H.

Statement showing the condition of survey marks on the 30th June 1900.

Subdivision.	Classification.	Total number (columns 6, 7, and 8).	Total number found in good order by mandals or patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order, on 30th June 1900.	Number lost or left unnoticed.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Karimganj ...	(*a*) Trijunction prisms ...	100	96	...	...	96	4
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	1,964	1,013	436	326	1,449	189
	(*d*) Prisms on boundaries of grants	124	124	...	...	124	...
	(*e*) Brick pillars of grants, etc. ...	285	285	...	...	285	...
	(*f*) Country stones ditto ...	97	81	...	...	81	16
	(*g*) Pipes ditto	2	2	...	...	2	...
	(*h*) Mounds ditto	2,132	1,421	...	672	1,421	39
	Total Karimganj ...	4,704	3,022	436	998	3,458	248
North Sylhet (Jaintia).	(*a*) Trijunction prisms ...	598	486	1	79	487	32
	(*b*) Traverse stations shown by mounds and *simul* boughs (country stones)	10,159	8,014	75	454	8,089	1,616
	(*c*) Kanungos' mounds, including jungle mounds	27	15	...	3	15	9
	(*d*) Prisms on boundaries of grants, etc.	87	75	...	4	75	8
	(*e*) Concrete blocks ditto ...	147	136	2	9	138	...
	(*f*) Country stones ditto ...	1,360	1,292	5	39	1,297	24
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total Jaintia	12,378	10,018	83	588	10,101	1,689
Goalpara ...	(*a*) Trijunction prisms ...	584	567	7	10	574	...
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	3,835	658	2,984	136	3,642	57
	(*c*) Kanungos' mounds, including jungle mounds	122	122	...	...	122	...
	(*d*) Prisms on boundaries of grants, etc.	...	...	...	...	...	...
	(*e*) Concrete blocks ditto ...	...	...	...	...	...	...
	(*f*) Country stones ditto ...	...	...	...	...	...	...
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total Goalpara	4,541	1,347	2,991	146	4,338	57

APPENDIX H—*continued.*

Subdivision.	Classification.	Total number (columns 6, 7, and 8).	Total number found in good order by mandals or patwaris.	Total number found not in good order by mandals or patwaris		Total of columns 4 and 5, or total in good order, on 30th June 1900.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Barpeta ...	(*a*) Trijunction prisms	983	759	124	8	883	92
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	5,655	1,034	2,459	883	3,493	1,279
	(*c*) Kanungos' mounds, including jungle mounds	1,352	547	609	75	1,156	121
	(*d*) Prisms on boundaries of grants, etc.	264	225	11	1	236	27
	(*e*) Concrete blocks ditto ...	886	799	40	1	839	46
	(*f*) Country stones ditto ...	1,545	1,009	62	1	1,071	473
	(*g*) Mounds ditto ...	206	162	6	35	168	3
	Total Barpeta	10,891	4,535	3,311	1,004	7,846	2,041
Gauhati ...	(*a*) Trijunction prisms ...	2,967	2,624	60	85	2,684	198
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	5,030	1,794	1,661	925	3,455	650
	(*c*) Kanungos' mounds, including jungle mounds	5,611	2,214	1,562	988	3,776	847
	(*d*) Prisms on boundaries of grants, etc.	3,276	3,106	81	38	3,187	51
	(*e*) Concrete blocks ditto ...	5,787	4,842	166	428	5,008	351
	(*f*) Country stones ditto ...	7,065	6,507	180	211	6,687	167
	(*g*) Mounds ditto ...	1,087	737	47	241	784	62
	Total Gauhati	30,823	21,824	3,757	2,916	25,581	2,326
Mangaldai ...	(*a*) Trijunction prisms ...	1,536	1,516	...	...	1,516	20
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	6,886	3,230	2,939	436	6,169	281
	(*c*) Kanungos' mounds, including jungle mounds ...	200	87	58	35	145	20
	(*d*) Prisms on boundaries of grants, etc.	710	708	...	...	708	2
	(*e*) Concrete blocks ditto ...	1,399	1,397	...	...	1,397	2
	(*f*) Country stones ditto ...	487	487	...	...	487	...
	(*g*) Mounds ditto ...	133	89	1	43	90	...
	(*h*) Brick pillars	73	72	...	...	72	1
	Total Mangaldai	11,424	7,586	2,998	514	10,584	326
Tezpur ...	(*a*) Trijunction prisms	460	375	78	...	453	7
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	2,854	1,341	1,206	260	2,547	47
	(*c*) Kanungos' mounds, including jungle mounds	116	54	56	6	110	...
	(*d*) Prisms on boundaries of grants, etc.	35	35	...	...	35	...
	(*e*) Concrete blocks ditto ...	1,231	919	8	304	927	...
	(*f*) Country stones ditto ...	348	345	3	...	348	...
	(*g*) Mounds ditto ...	6	2	4	...	6	...
	Total Tezpur	5,050	3,071	1,355	570	4,426	54

APPENDIX H—*continued.*

Subdivision.	Classification.	Total number (columns 6, 7, and 8).	Total number found in good order by mandals or patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order, on 30th June 1900.	Number lost or left unvisited.
				Repaired	Not repaired.		
1	2	3	4	5	6	7	8
Nowgong ...	(*a*) Trijunction prisms	2,245	2,114	99	21	2,213	11
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	13,175	7,541	4,274	998	11,815	362
	(*c*) Kanungos' mounds, including jungle mounds	601	388	176	34	564	3
	(*d*) Prisms on boundaries of grants, etc.	529	527	...	2	527	...
	(*e*) Concrete blocks ditto ...	304	304	...	...	304	...
	(*f*) Country stones ditto ...	255	255	...	...	255	...
	(*g*) Mounds ditto ...	749	589	12	148	601	...
	Total Nowgong	17,858	11,718	4,561	1,203	16,279	376
Golaghat ...	(*a*) Trijunction prisms	577	540	27	...	567	10
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	5,856	3,230	1,375	923	4,605	328
	(*c*) Kanungos' mounds, including jungle mounds	269	168	92	9	260	...
	(*d*) Prisms on boundaries of grants, etc.	224	224	...	...	224	...
	(*e*) Concrete block ditto ...	1,046	1,046	...	...	1,046	...
	(*f*) Country stones ditto ...	78	78	...	...	78	...
	(*g*) Mounds ditto ...	93	93	...	...	93	...
	Total Golaghat	8,143	5,379	1,494	932	6,873	338
Jorhat ...	(*a*) Trijunction prisms	964	954	...	1	954	9
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	9,822	4,492	3,472	1,125	7,964	733
	(*c*) Kanungos' mounds, including jungle mounds	414	205	187	22	392	...
	(*d*) Prisms on boundaries of grants, etc.	827	827	...	...	827	...
	(*e*) Concrete blocks ditto ...	2,145	2,115	...	...	2,115	30
	(*f*) Country stones ditto ...	258	258	...	...	258	...
	(*g*) Mounds ditto ...	27	27	...	...	27	...
	Total Jorhat	14,457	8,878	3,659	1,148	12,537	772
Sibsagar sadr ..	(*a*) Trijunction prisms	1,039	1,011	...	25	1,011	3
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	11,016	5,421	2,252	1,673	7,673	1,670
	(*c*) Kanungos' mounds, including jungle mounds	207	153	22	32	175	...
	(*d*) Prisms on boundaries of grants, etc.	856	856	...	...	856	...
	(*e*) Concrete blocks ditto ...	1,085	1,085	...	...	1,085	...
	(*f*) Country stones ditto ...	50	50	...	...	50	...
	(*g*) Mounds ditto ...	56	56	...	...	56	...
	Total Sibsagar sadr	14,309	8,632	2,274	1,730	10,906	1,673

APPENDIX H—*concluded.*

Subdivision.	Classification.	Total number (columns 6, 7, and 8).	Total number found in good order by mandals or patwaris.	Total number found not in good order by mandals or patwaris.		Total of columns 4 and 5, or total in good order, on 30th June 1900.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
Dibrugarh ...	(*a*) Trijunction prisms	403	402	...	...	402	1
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	2,950	1,731	1,042	146	2,773	31
	(*c*) Kanungos' mounds, including jungle mounds	541	500	41	...	541	...
	(*d*) Prisms on boundaries of grants, etc.	432	432	...	...	432	...
	(*e*) Concrete blocks ditto ...	859	859	...	...	859	...
	(*f*) Country stones ditto ...	...	...	...	...	...	...
	(*g*) Mounds ditto ...	...	...	...	...	...	...
	Total Dibrugarh	5,185	3,924	1,083	146	4,907	32
North Lakhimpur.	(*a*) Trijunction prisms	200	198	2	...	200	...
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	1,612	1,314	250	48	1,564	...
	(*c*) Kanungos' mounds, including jungle mounds	91	45	40	6	85	...
	(*d*) Prisms on boundaries of grants, etc.	4	4	...	...	4	...
	(*e*) Concrete blocks ditto ...	239	239	...	...	239	...
	(*f*) Country stones ditto ...	50	44	4	2	48	...
	(*g*) Mounds ditto ...	150	125	20	5	145	...
	Total North Lakhimpur ...	2,346	1,969	316	61	2,285	...
Total ...	(*a*) Trijunction prisms	12,656	11,642	398	229	12,040	387
	(*b*) Traverse stations shown by mounds and *simul* boughs ...	80,814	40,813	24,425	8,333	65,238	7,243
	(*c*) Kanungos' mounds, including jungle mounds	9,675	4,622	2,843	1,210	7,465	1,000
	(*d*) Prisms on boundaries of grants, etc.	7,529	7,304	92	45	7,396	88
	(*e*) Concrete blocks ditto ...	15,225	13,822	216	742	14,038	445
	(*f*) Country stones ditto ...	11,498	10,327	254	253	10,581	664
	(*g*) Mounds ditto ...	4,639	3,301	90	1,144	3,391	104
	(*h*) Brick pillars	73	72	...	...	72	1
	Total	142,109	91,903	28,318	11,956	120,221	9,932

APPENDIX I.

Statement showing the Area of each Supervisor Kanungo's Circle in the cadastrally-surveyed portion of the Province.

Subdivision.	Name of kanungo's circle.	*Nisf-khiraj.*	*Lakhiraj.*	Permanently settled.	*Khiraj* settled.	*Khiraj* unsettled.	Grants.	Total.	Number of mandals' or patwaris' circles.
1	2	3	4	5	6	7	8	9	10
		Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.	
Hailakandi	Hailakandi	...	0·73	...	83·94	7·08	33·18	12	15
	Saraspur	...	...	...	76·49	14·26	54·58	145·33	14
	Total Hailakandi ...	...	0·73	...	160·43	21·34	87·76	270·26	29
Silchar ...	Chatlahaor	...	...	...	62·37	26·93	55·67	144·97	10
	Katigora	...	0·34	...	109·13	33·93	1·51	144·91	16
	Barakpar	...	0·08	...	49·27	10·36	20·57	80·28	8
	Udharband	...	1·03	...	95·15	10·52	36·79	143·49	12
	Lakhipur	...	...	...	84·25	14·61	34·57	133·43	11
	Sonapur	...	...	...	91·36	12·41	12·11	115·88	11
	Total Silchar ...	...	1·45	...	491·53	108·76	161·22	762·96	68
	Total Cachar ...	...	2·18	...	651·96	130·10	248·98	1,033·22	97
Karimganj ...	Pratabgarh	...	...	...	30·49	28·74	59·85	119·08	4
North Sylhet (Jaintia).	Kanairghat	...	1·17	1·97	95·62	23·40	6·80	128·96	13
	Jaintiapur	0·12	0·46	0·18	62·88	40·85	0·06	104·55	9
	Haripur	...	9·14	0·98	76·23	53·29	2·65	142·29	13
	Gowainghat	...	0·43	0·13	55·12	49·80	2·98	108·46	11
	Total Jaintia	0·12	11·20	3·26	289·85	167·34	12·49	484·26	46
	Total Sylhet	0·12	11·20	3·26	320·34	196·08	72·34	603·34	50
Dhubri ...	Bijni, Sidli, and Guma ...	...	...	...	79·94	250·67	1·66	332·27*	28
Barpeta ...	Bajali	22·82	0·71	...	63·80	72·11	...	159·44	22
	Barpeta	8·44	0·77	...	19·75	118·90	...	147·85	20
	Roha	22·14	0·20	...	32·92	185·09	...	240·35	19
	Total Barpeta ...	53·40	1·68	...	116·47	376·10	...	547·65	61
Gauhati ...	Beltola	3·16	0·56	...	31·48	50·17	1·81	87·18	13
	Palasbari	8·81	1·98	...	59·32	47·07	...	117·18	22
	Boko	0·51	0·30	...	20·89	91·35	...	113·05	17
	Chhaigaon	2·66	1·36	...	36·68	79·68	1·58	121·96	20
	Hajo	27·71	19·63	...	30·08	57·15	1·56	136·13	21
	Barkhetri	3·41	0·49	...	19·63	56·21	...	79·74	17
	Rangiya	47·33	4·03	...	71·68	70·35	0·7	193·50	26
	Nalbari	23·45	1·45	...	66·20	26·12	0·72	117·94	19
	Tambulpur	4·11	0·45	...	34·86	136·43	0·68	176·53	18
	Baroma	14·96	3·36	...	56·52	65·20	...	140·04	18
	Patidarrang	39·79	10·79	...	53·10	41·26	0·80	145·68	20
	Total Gauhati ...	175·90	44·40	...	479·84	720·93	7·86	1,428·93	211
	Total Kamrup ...	229·30	46·08	...	596·31	1,097·03	7·86	1,976·58	272

* Divided into two circles since the close of the year.

APPENDIX I—*continued.*

Subdivision.	Name of kanungo's circle.	*Nisj-khiraj.*	*Lakhiraj.*	Permanently settled.	*Khiraj* settled.	*Khiraj* unsettled.	Grants.	Total.	Number of mandals' or *patwaris'* circles.
1	2	3	4	5	6	7	8	9	10
Mangaldai ...	Mangaldai	7·27	1·70	...	50·43	95·17	5·33	159·90	23
	Kalaigaon	32·95	2·04	...	70·92	129·91	12·62	247·54	24
	Patharughat	4·44	0·61	...	50·46	81·54	0·32	137·37	20
	Bengbari	...	0·09	...	43·50	129·76	8·55	181·90	16
	Total Mangaldai ...	44·66	4·44	...	214·41	436·38	26·82	726·71	83
Tezpur ...	Eastern circle... ...	1·34	1·23	...	41·97	60·17	2·42	107·13	14
	Western ,, ...	1·27	0·27	...	67·06	77·37	0·46	146·43	20
	Total Tezpur... ...	2·61	1·50	...	109·03	137·54	2·88	253·56	34
	Total Darrang ...	44·27	5·94	...	323·44	573·92	29·70	980·27	117
Nowgong ...	Silghat	3·16	2·35	...	60·72	72·35	10·30	148·88	22
	Town	1·73	0·76	...	73·37	104·55	1·47	181·88	32
	Doboka	0·12	0·25	...	31·83	79·70	10·95	122·85	18
	Roha	0·03	0·02	...	37·87	110·85	1·55	150·32	22
	Dhing	3·24	0·04	...	30·19	134·98	0·40	168·85	19
	Gerua	...	...	...	21·28	106·57	...	127·85	17
	Ghugua	0·12	0·19	...	34·66	80·73	...	115·70	21
	Mayang	...	...	...	9·88	83·56	0·83	94·27	11
	Total Nowgong ..	8·40	3·61	...	299·80	773·29	25·50	1,110·60	162
Golaghat ...	Northern circle ...	0·69	0·41	...	95·56	71·88	21·64	190·18	26
	Southern ,, ...	0·20	1·37	...	94·89	47·47	20·23	164·16	21
	Total Golaghat ...	0·89	1·78	...	190·45	119·35	41·87	354·34	47(*a*)
Jorhat ...	Eastern circle ...	0·55	0·23	...	86·71	57·48	23·01	167·98	19
	North-Western circle ...	0·93	9·00	...	102·68	52·22	36 04	200·87	23
	South-Western ,, ...	1·26	5·46	...	75·65	38·16	43·12	163·65	17
	Majuli	0·03	34·92	...	21·22	93·51	0·68	150·36	19
	Total Jorhat ...	2·77	49·61	...	286·26	241·37	102·85	682·86	78(*b*)
Sibsagar sadr...	Eastern cricle ...	0·23	2·91	...	80·67	164·44	39·98	288·23	26
	Central ,, ...	2·11	0·47	...	73·96	101·31	12·53	190·38	21
	Western ,, ...	0·47	0·23	...	101·78	61·36	40·09	203·93	24
	Total Sibsagar sadr ...	2·81	3·61	...	256·41	327·11	92·60	682·54	71
	Total Sibsagar ...	6·47	55·00	...	733·12	687·83	237·32	1,719·74	196
North Lakhimpur	North Lakhimpur ...	0·37	2·69	...	44·78	35·58	0·51	83·93	20
Dibrugarh ...	Dibrugarh circle ...	0·24	...	...	55·20	21·88	31·23	108·55	15
	Chabua ,, ...	1·27	0·10	...	56·64	48·55	11·53	118 09	14
	Tinsukia ,, (*c*) ...	0·07	0·10	...	14·92	17·77	0·43	33·29	6
	Total Dibrugarh ...	1·58	0·20	...	126·76	88·20	43·19	259·93	35
	Total Lakhimpur. ...	1·95	2·89	...	171·54	123·78	43·70	343·86	55

(*a*) Exclusive of 6 mandals of Ahatguri.

(*b*) Inclusive of ditto ditto.

(*c*) Only the cadastrally-surveyed portion of the circle has been shown.

APPENDIX J.

I.—List of plants sent to the Reporter on Economical Products for the index collections.

1. *Aglai edulis*	Botanical specimens.
2. *Artemisia vulgaris*	Leaves and flowers.
3. *Bauhinia variegata*	Flowers, seeds and botanical specimens.
4. *Dioscorea*	Roots (yams).
5. *Milletia pachycarpa*	Botanical specimens.

II.—List of products sent to the Reporter on Economical Products, for the commercial collections.

1. *Aquilaria Agaliocha*	Agar wood and oil.
2. *Allium tuberosum* (Khasi *jyllang*) ...	Tubers.
3. *Altingia excelsa*	Resin.
4. *Dolichos biflorus*	Seeds.
5. *Elæocarpus ganitrus*	Nuts.
6. *Glycina soja* (Khasi *rymbaiktung*) ...	Seeds.
7. *Lathyrus sativus*	Seeds.
8. *Myristica gibbosa*	Natural varnish.
9. *Phaseolus calcaratus* (Khasi *rymbaija*) ...	Seeds.
10. *P. radiatus*	Seeds.
11. *Pisum sativum*	Seeds.
12. *Prunus Nepalensis*	Fruits and stones.
13. *Pueraria phaseoloides*	Seeds.
14. *Schima Wallichii*	Bark.

III.—List of plants submitted to the Reporter on Economical Products, in connection with revision of the list of field crops in Assam.

Vernacular name.	Scientific name.
1. *Bejiamâh*	*Pueraria phaseoloides, Benth.*
2. *Latábel*	*Passi flora quadrangularis.*
3. *Arrowroot*	*Curcuma angustifolia, Roxb.*
4. *Sowa or Sowa támul*	*Caryota urens—Linn.*
5 & 6. *Gandhana* (*Beng.*) *and jyllang* (*Khasi*)	*Allium tuberosum, Roxb.*
7. & 8. *Nepali lai and Manipuri lai* ...	*Brassica chinensis.*
9. *Kajlalai*	*Brassica rugosa.*
10. *Barlai*	*Brassica juncea, H. F., etc., T.*
11 *to* 13. *Baga sariha*, 3 varieties ...	*Brassica campestris, Linn. Var. Sarson.*
14 & 15. *Ranga sariha*, 2 varieties ...	*Brassica Napus, Linn. Var. dichotma.*
16. *Mandhania*	Not yet identified.
17. *Kataridabua máh*	*Phaseolus lunatus, Linn.*
18. *Pangmula*	*Raphanus sativus, Linn.*
19 *to* 21. *Patani jokra* (Ass.), *Rymbaija* (Khasi) and *Aningken* (Naga) ...	*Phaseolus calcaratus, Roxb.*
22 & 23. *Rymbaiktung* (Khasi) *and An-ing-kiyo* (Naga)	*Glycina soja, Sieb and Zucc.*
24. *Baberi sâg*	*Chrysanthemum Coronarium, Linn.*
25. *Pará-amlakhi*	*Phyllanthus Hamiltonianus, Muell. Arg.*
26. *Bethuá Ság*	*Chenopdium album Linn.*
27. *Mati thekera*	*Garcinia lanceæfolia, Roxb.*
28. *Tepor tenga*	*Garcinia Xanthochymus, Hook.*

APPENDIX K.

Statement showing the Number of Deaths among Cattle during 1899-1900 *and* 1900-1901.

District.	Rinderpest.		Foot and mouth disease.		Swelling of mouth and throat.		Diarrhœa, dysentery, and cholera.	
	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.
1	2		3		4		5	
Cachar	95	165	138	137	556	172	469	247
Sylhet	3,550	2,436	3,611	3,268	5,946	4,038	4,375	4,071
Goalpara	1,366	748	3,437	2,110	1,616	1,348	768	645
Kamrup	1,569	580	8,684	4,427	8,260	9,817	9,226	3,764
Darrang	1,249	2,536	2,521	1,446	706	461	2,346	1,880
Nowgong	589	50	4,146	1,420	2,212	650	4,633	3,008
Sibsagar	1,051	3,288	2,212	1,334	1,612	554	3,914	4,508
Lakhimpur	...	1,567	396	311	74	245	164	3,124
Naga Hills	...	...	...	...	...	...	...	...
Khasi and Jaintia Hills ...	...	...	147	40	26	33	900	...
Garo Hills	... *	...	... *	131	... *	...	...*	...
Total	9,469	11,370	25,292	14,624	21,008	17,318	26,795	21,247

APPENDIX K—*continued.*

District.	Anthrax.		Catarrh.		Other diseases.		Total.		Estimated value of cattle.	
	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.	1899-1900.	1900-1901.
	6		7		8		9		10	
									Rs.	Rs.
Cachar ...	...	25	21	25	193	149	1,472	920	16,253	13,898
Sylhet ...	86	117	1,110	470	12,720	9,476	31,398	23,876	2,87,468	2,08,581
Goalpara ...	267	147	642	637	6,301	3,125	14,397	8,760	84,835	55,587
Kamrup ...	239	317	...	...	10,627	5,840	38,605	24,745	2,92,019	1,84,481
Darrang ...	46	44	137	77	5,089	3,432	12,094	9,876	1,07,524	75,541
Nowgong ...	...	...	...	...	1,873	1,362	13,453	6,490	1,07,624	51,920
Sibsagar ...	259	348	284	202	7,631	5,091	16,963	15,325	1,50,286	1,74,764
Lakhimpur ...	...	...	...	...	802	1,575	1,436	6,822	14,360	68,220
Naga Hills ...	...	...	...	...	...	...	...*	...*	...	...
Khasi and Jaintia Hills	...	...	...	...	45	52	1,118	125	11,606	2,000
Garo Hills ...	...*	...	...*	...	...*	87	...*	218	...*	2,073
Total ...	897	998	2,194	1,411	45,281	30,189	1,30,936	97,157	10,71,975	8,37,065

* Information not available.

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Resolution on the Report of the Department of Land Records and Agriculture, Assam, for 1900-1901.

Extract from the Proceedings of the Chief Commissioner of Assam in the General Department, No. 3098R., dated Shillong, the 9th September 1901.

Read—

The Annual Report of the Director, Department of Land Records and Agriculture, Assam, for 1900-1901.

RESOLUTION.

THIS report, which is submitted by Mr. Henniker, the permanent Director, who returned from leave on the 30th of November last, is a record of good work. A considerable amount of additional labour devolved on the officers of his staff in connection with the census, and it is satisfactory, therefore, to find that the efficiency of the Department was generally maintained, while improvements are noticeable in several directions. The amount of touring done by Sub-Deputy Collectors and supervisor kanungos was on the whole sufficient, but in some cases the amount of testing done by Sub-Deputy Collectors fell short of the prescribed standard. The following Sub-Deputy Collectors are specially commended by the Director:—Babus Radha Mohan Das and Harendra Kumar Ghosh of Nowgong, Mahendra Chandra De of Tezpur, Jajnesvar Das Gupta of Mangaldai, and Debendra Kumar Mukharji of Gauhati. The Chief Commissioner regrets to find that the Land Records work in the Dibrugarh tahsil is in an unsatisfactory state, having been neglected by the Sub-Deputy Collector, who has recently been transferred to another district.

2. The Chief Commissioner recognises that increased attention has been paid to the supervision of the work of mandals and patwaris by officers in charge of districts and subdivisions. During the year the papers of 592 mandals were examined by Deputy Commissioners and Subdivisional Officers, against 359 in the preceding year. In this connection special credit is due to Messrs. Lees and Gruning and Major Gurdon, Deputy Commissioners, and Messrs. Emerson and Strong, Assistant Commissioners.

3. The mauza books are now kept up in all districts of Assam proper, except Nowgong, where it is proposed to introduce them during the current year. In these books the statistics of 4,919 villages, with an aggregate area of 4,854·8 square miles, are recorded. In spite of the additional work caused by the census, the village and mauza statements have been written up to date in most of the supervisor kanungos' circles. The preparation of the subtenancy register was suspended during the year in order to set free the mandals for census work. The work of marking the direction of waterflow on the cadastral maps was pushed on, nearly 1,800 crop experiments were carried out, and notes on the economic condition of 170 villages were prepared. The mauza-book work of every district, except Sibsagar, was inspected by Mr. Basu, Assistant to the Director, and his reports show that it is making satisfactory progress, though in some places, especially in the Lakhimpur district, it appears that it had not received due attention from the Sub-Deputy Collectors in charge, and consequently the books are incomplete and wanting in accuracy. The Director reports that, except Major Gurdon, Deputy Commissioner of Kamrup, none of the District or Subdivisional Officers exercised any effective supervision over the mauza-book work. This neglect is attributed to the census, but that work is now over, and Mr. Cotton trusts that in future he will not have again to complain of District Officers in the Assam Valley devoting inadequate attention to this important branch of their duties.

4. The experiments carried out at the Upper Shillong Experimental Farm have proved successful in the case of root crops and fodder grasses, especially rye grass and clover, but the seed-forming crops of Upper India which have been tried (wheat, barley, oats, linseed, etc.) have been found liable to fail, owing to the fact that the rains set in about the time of flowering and prevent development of seed. Lucerne has now been tried for three years without success, while the silo pits have again proved completely successful. The experiments conducted at the farm up to date appear to show that there is no difficulty in raising fodder crops and preserving fodder for cattle in the winter, when natural grass is very scarce in the Khasi Hills.

An experimental dairy was established and opened in Shillong in July 1900, with the object of improving the local supply of dairy produce, and introducing a new industry into the province. Excellent butter is now produced, which is supplied to the residents of Shillong, and is also sent in tins to other stations in Assam. The dairy has proved so far a financial success, and it is contemplated to transfer the business to private hands as soon as its prospects are assured.

5. The report also contains notices of the cultivation of *sisal* hemp at Dauracherra in Sylhet, which is being energetically pushed, and of experiments made by Babu Debeswar Gohain and Mr. Matilal Haldar in growing sugarcane on a considerable scale, and by the manager of the Bamgaon tea estate in growing *balam* rice and husking paddy by steam machinery. These experiments, as well as the experimental cultivation of the rubber tree on a considerable scale in the Charduar plantation by private enterprise and of rhæa fibre in more than one locality, are all of interest and fraught with importance to the future prosperity of the province, and the Chief Commissioner is glad to encourage them in every reasonable way.

6. Mr. Cotton desires to thank Mr. Lees for good work done during the period he acted as Director, and Mr. Basu, who continued to be Assistant to the Director throughout the year, for his very valuable services in the Departments of both Land Records and Agriculture.

By order of the Chief Commissioner of Assam,

F. J. MONAHAN,

Secretary to the Chief Commissioner of Assam.

A. S. P. O. (Rev.) No. 323—420—10-9-1901.

REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR THE YEARS

1901-1902 and 1902-1903.

BY

F. C. HENNIKER, Esq., I.C.S.,

DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM.

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FROM

F. C. HENNIKER, Esq., I.C.S.,
Director, Department of Land Records and Agriculture, Assam,

TO

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 22nd August 1903.

SIR,

I HAVE the honour to submit the Report on the operations of this Department for the two years ending the 31st March 1903. The delay in its submission is due mainly to the fact that it is for two years, and materials were submitted by districts in three successive batches, *viz.*, firstly, for the year 1901-1902, then for the 18 months ending the 30th September 1902 (for which period the report was then ordered to be prepared), and finally for the two years ending the 31st March 1903. The latest reports from districts, *viz.*, for the Hailakandi and the Sibsagar sadr subdivisions, were received only on the 27th July and 5th August, respectively. The form of the report also has been changed somewhat. It is also, I fear, rather bulky, which is unavoidable, since it is for a period of two years.

I have the honour to be,

SIR,

Your most obedient Servant,

F. C. HENNIKER,

Director, Department of Land Records and Agriculture, Assam.

[Prescribed maximum length=30 pages.]

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REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR THE YEARS

1901-1902 and 1902-1903.

CHAPTER I.

INTRODUCTION.

1. THE present report deals with a period of two years, from 1st April 1901 to the 31st March 1903. Under instructions conveyed in December 1901 from the Local Administration, the year for the report was to end on the 30th September instead of the 31st March. The report was thus to cover a period of 18 months ending the 30th September 1902. But the preparation of the report was suspended by a subsequent order of the Hon'ble the Chief Commissioner, and, later, the year for the report was again made to coincide with the revenue year as heretofore.

The report.

Hence, two years in all have elapsed since the last report issued. The results of Survey and Settlement operations, hitherto the subject of a separate report, have been incorporated in this report for the first time under instructions contained in Secretary's letter of 27th December 1901 (No. 795Rev.—4585R.).

2. With the exception of six months, from the 5th May 1902, when Mr. B. C. Allen officiated for me, I was Director of the Department for the whole period under review.

Charge.

The post of Assistant to the Director was held by Mr. B. C. Basu, B.A., M.R.A.C., M.R.A.S. (ENG.), with the exception of one month, from the 21st April 1901, during which he was absent on privilege leave.

Mr. T. Shaw was in charge of the office of Superintendent of the Provincial Surveys, Assam, until the 27th July 1902, when he proceeded on privilege leave for three months, and Mr. C. A. O'Donel was placed in charge of the office. Mr. Shaw resumed charge on the 27th October 1902. Mr. O'Donel is the second and junior officer of the Provincial Survey Detachment (Sub-Assistant Superintendent). For a large part of the period under review he has been on deputation under the Civil Court, Judge of Sylhet, he being a Commissioner appointed at the instance of Government in a civil suit by the Raja of Hill Tipperah. Mr. O'Donel's services have thus been practically lost to the Department for two entire cold seasons. It was never anticipated that his work would last so long.

3. From the 1st April 1901 to the 1st April 1902 I was on tour for 87 days, excluding 34 days spent in connection with my deputation to Burma to study settlement procedure there. I inspected the *Ilam* Settlement Office at Maulvi Bazar and the work of the Land Records staff of Goalpara, visiting Bijni and Sidli for that purpose. I toured in Kamrup, Darrang, Nowgong, Sibsagar, and Lakhimpur, inspecting and collecting materials for my Report on the resettlement of the Assam Valley districts, which was submitted on the 3rd May 1902. My visit to Burma was in January-February 1902. I arrived at Rangoon on the 21st January 1902 and visited the districts of Minbu and Magwe in Upper Burma and Bassein in Lower Burma. I accompanied Settlement Officers at work and saw their classification, etc., in progress. The information obtained by me was embodied in a note on settlement procedure in Burma submitted in February 1902. In July-August 1902 Mr. Allen was on tour for 48 days. He inspected the Jaintia and *Ilam* Settlement Offices at Sylhet and the Settlement Office, Cachar. He also visited Dhubri, Gauhati, Tezpur, and Sibsagar, where he convened a meeting to discuss the subject of embankments in the Sibsagar district.

Tours of the Director.

After I resumed charge I went first to North Kamrup, where I toured with the Settlement Officer, Mr. H. C. Barnes, visiting Nalbari, Tambulpur, Baroma, etc. Thence I proceeded to Sibsagar and met the Settlement Officer, Mr. L. J. Kershaw. The work of settlement had just started in these districts.

After attending the Delhi Darbar, I travelled through Jaintia (where at that time the work of separating *ijmali pattas* was in progress), Cachar (where I inspected the Deputy Commissioner's Revenue Office), and *viâ* Haflong to Sibsagar again. Here I held another embankment meeting. From Sibsagar I went through the Majuli to North Lakhimpur, thence by road into the Darrang district. After that I returned to Kamrup, visiting Barpeta and Bajali, where the Settlement Officer was at work. I then made a final visit to Sibsagar, where I held the last meeting of the embankment committee and prepared their final report. In the two years the Director was on tour for 330 days.

Tours of the Assistant to the Director.

4. During the two years under report Mr. Basu was on tour for 282 days, exclusive of his visits to the Experimental Farm at Upper Shillong. The 282 days included 172 days during 1901-1902 and 110 days during 1902-1903. In the latter year he was much occupied at headquarters with the establishment of the new fruit garden near Shillong. Out of the total period on tour, Mr. Basu devoted about half to the inspection of the mauza-book and of the work of the Land Records staff in the Assam Valley districts. He was for over two months engaged in collecting material for his note on resettlement in the Assam Valley, and he spent another two months in the Sibsagar and Lakhimpur districts, investigating the subject of embankments as a protection against flood. He was a member of the committee constituted to report on these embankments [the other members being the Deputy Commissioner and the Executive Engineer, Sibsagar, the Director of Land Records and Agriculture (President), and three Assamese private gentlemen].

Tours of the Superintendent of Provincial Surveys and the Sub-Assistant Superintendent of Surveys.

5. Mr. T. Shaw, Superintendent of Provincial Surveys, Assam, was on tour for 444 days, during which he inspected the work of 39 supervisor kanungos and 558 mandals and patwaris. There are in all 60 kanungos and 1,145 mandals. It is to be regretted that the Superintendent was unable to visit the Eastern Duars of Goalpara in either of the two years, and it has been pointed out that he should always, where possible, make his inspections in the field in preference to assembling the Land Records staff and inspecting their papers at one centre. The papers of 4,800 villages in all were examined by him. This was in addition to his work for the Survey Department, which consisted of supervising the sub-surveyors engaged on topographical and other survey. He manages the Drawing Office in Shillong. He conducted 3 examinations for first-class survey certificates, namely, 2 for the Gauhati School and 1 for the Jorhat School. There was thus no first-class certificate examination in Dibrugarh. But the working of that school left much to be desired, and it is useless to hold an examination when there are no candidates fit to undergo it. Mr. Shaw also held survey classes for training of officers twice—once in 1902 and again in 1903.

Other officers of the Department.

6. Since the commencement of the cold weather of 1902-1903, there have been added to the officers under the control of this Department the two Settlement Officers of Sibsagar and Kamrup. They have under them four Assistant Settlement Officers. Further notice of settlement work will be found in a subsequent chapter.

CHAPTER II.

LAND RECORDS.

Mandals and patwaris.

7. The sanctioned strength of mandals and patwaris was increased from 1,145 to 1,151, 6 additional mandals having been sanctioned for the Darrang district. Of these, 226 were in the first grade, 344 in the second grade, and 581 in the third grade. With effect from the 1st April 1903, the proportion of mandals in each of the three grades, *viz.*, 2, 3, 5, has been altered so as to increase the number in the second grade by reducing the third grade. Therefore, there will be henceforward 226 mandals in the first grade, 699 in the second grade, and 226 in the third grade. The number actually entertained on 31st March 1903 was 1,136 of all grades. The number entertained in the first grade is 9 more than when last reported. There was a satisfactory decrease in the number of uncertificated mandals and patwaris. Only 58 are now without certificates, against 80 on 31st March 1901. Of these, 35 are exempted from passing in surveying. Eight of the remaining 23 are in the Jaintia parganas in the Sylhet district, and are only temporary men officiating in place of permanent incumbents qualified in surveying. It may be remarked here that the absence of a survey school for Sylhet and Cachar may be the cause of this. The establishment of a school was under discussion, but it appeared very doubtful whether the results to be obtained would justify the expenditure. The number of unqualified mandals in Nowgong has decreased from 27 to 5 only.

The average size of a mandal's circle in the Assam Valley districts is 14,958 *bighas*, and of a patwari's circle in Jaintia and Cachar 20,381 and 20,644 *bighas*, respectively. In the *ilam* and other temporarily-settled estates in Sylhet regular circles have not yet been formed. The necessity of maintaining a permanent patwari's staff for this area has been under discussion. It has been proposed to reduce the present kanungo establishment for *ilam* lands, Langai-Singla disforested area, and Pratabgarh to a staff of 10 patwaris with two supervisor kanungos for Karimganj and two supervisor kanungos and 10 permanent amins to be maintained at Sylhet. A redistribution of patwaris' circles in Cachar with a view to a reduction in the sanctioned scale for that district is also under contemplation.

Recently, I called for information showing how far mandals are employed in the circles where their homes are. District Officers have not yet furnished complete figures, but the statistics of Kamrup are available and may be quoted. In this district there are 296 mandals. Of these, 120 have charge of the circles in which their homes are. But many circles appear to have produced several mandals with the result that there are 151 mandals in charge of alien circles, while the circle of their homes is already in charge of a local man. There are 24 men in charge of alien circles while their home circle is in charge of a stranger. These 24 men should, if possible, be restored to their homes, though of course there may be particular circumstances known to the Deputy Commissioner that obstruct such an arrangement. In those circles where there is no local man qualified to serve, it should be the object of the Sub-Deputy Collector to persuade some likely youth to undergo training and so secure the post.

The efficiency of a mandal depends largely upon his knowledge of the circle and its inhabitants, and this can best be secured by the employment of a local man as mandal wherever possible. He knows and is known to the neighbourhood. His work is consequently easy for him, and he is not subject to the continual temptation to leave the circle to go to his home. It is, therefore, important that mandals already in service should, as far as possible, be transferred to the circle where their homes lie, and that in cases of vacancies occurring local men should be appointed if available.

The working of the rules for the distribution of mandals' and patwaris' pay was fairly satisfactory, but still presents difficulties, the great stumbling block being the necessity to obtain an acquittance roll for the whole district before the next pay bill can be made out. The pay for all months up to February 1903 was drawn before the close of the year in all districts, except Kamrup and Sibsagar, which have a very large number of tahsils, mauzas, etc., to deal with, and are under resettlement. But this, I fear, is due to special efforts made towards the close of the year. In the course of inspection it often transpires that the mandals have not been paid for two or three months, or even longer. A mandal, however, does not wholly depend for a livelihood on his pay as a rule, especially when his home is—as it should be—within his circle. It would, therefore, almost seem advisable to resolve to pay them quarterly and cease to attempt to distribute the pay each month.

Survey schools.

8. There are three survey schools in the province, *viz.*, at Dibrugarh, Jorhat, and Gauhati. The following statement gives in detail the number of pupils passed from each of the three schools in the province during the period from the 1st April 1901 to the 31st March 1903, and the average cost per pupil, side by side, with the figures for 1900-1901 :—

Year.	Number of pupils who received first-class certificates.				Number of pupils who received second-class certificates.				Total passed.	Total cost of the school.	Total receipts.	Net cost.	Average net cost of each passed pupil.
	Mauzadars.	Mandals.	Candidates.	Total.	Mauzadars.	Mandals.	Candidates.	Total.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14
										Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1900-1901 Gauhati ...	...	...	17	17	1	5	53	59	76	938 6 9	631 0 0	307 6 9	4 0 9
1900-1901 Jorhat ...	...	12	7	19	1	...	21	22	41	541 13 0	513 8 0	28 5 0	0 11 1
1900-1901 Dibrugarh ...	...	3	1	4	...	1	19	20	24	560 4 0	246 0 0	314 4 0	13 1 9
Total for 1900-1901...	...	15	25	40	2	6	93	101	141	2,040 7 9	1,390 8 0	649 15 9	4 9 9
1901-1903 Gauhati ...	...	1	17	18	1	14	101	116	134	1,995 15 0	1,490 0 0	505 15 0	3 12 5
1901-1903 Jorhat ...	...	8	7	15	...	...	16	16	31	928 6 0	597 13 0	330 9 0	10 10 7
1901-1903 Dibrugarh ...	...	...	...	...	...	2	14	16	16	1,105 12 0	476 0 0	629 12 0	39 5 9
Total for 1901-1903...	...	8	13	21	1	16	131	148	181	4,038 1 0	2,563 13 0	1,466 4 0	8 1 7

These results are not very encouraging. The total number of pupils passed during the whole period of two years was only 40 more than that for 1900-1901, and in case of the Jorhat and Dibrugarh Schools it was considerably below the number passed in that year. There has been a corresponding increase in the average cost per pupil at those two schools.

It was found that the manner in which the examination in practical surveying prescribed in Rule 10(3) of the Survey School Rules was held afforded no proper test of the pupil's ability to measure a field, plot it on the map, and calculate the area. To remedy this defect, instructions were issued in 1901 that plotting and area calculation are to be treated as separate subjects, each with a maximum of marks allotted, *viz.*, 70 and 30. The candidate to pass must get at least half in each branch. Further, it was laid down that the survey must be, wherever possible, a survey of actual fields, not artificial fields marked by flags on a *maidan*. The field to be surveyed must have at least four interior divisions. The allowing of pass marks "by grace" was restricted. These orders, while I hope they have tended to increased efficiency, may have repelled would-be candidates and so have caused the increased cost per head of Dibrugarh and Jorhat. In Jorhat no examinations were held during the last two terms. The permanent survey master has been appointed a supervisor kanungo in the settlement establishment, and the man selected to officiate in his place proved incompetent and unreliable. The results of one examination had to be rejected *in toto*, as it appeared that the candidates copied their maps from one another, and the master, whose duty it is to make a survey and send up a map by which the pupils' maps may be tested, copied the map of one of the pupils. The instruments of the school also were taken for settlement operations, which rendered instruction impossible, and the school had to be actually closed for some days. The Dibrugarh Survey School has a bad record. The pupils entering this school are generally of very inferior education, and great difficulty is experienced in obtaining candidates for the post of mandals willing to attend the survey school. The class of man who might read in this school and become a mandal prefers to go to the railway or tea gardens.

To add to these causes the results of one of the term examinations had to be rejected owing to some irregularities that occurred in conducting it. The district is still backward, and the mandals are indifferent. All these things are unfavourable to good general results.

I inspected all the survey schools on various occasions. Mr. Allen inspected the Gauhati school in July 1902.

Including the examination held at Jorhat in March 1901 and mentioned in paragraph 6 of my last report, four examinaions for first-class survey certificates (two at Jorhat and two at Gauhati) were held during the period. There was no first-class examination held at Dibrugarh for want of sufficient candidates.

The question of starting a survey school in the Surma Valley for the training of unqualified patwaris and for creating a reserve of qualified candidates for appointment as patwaris when vacancies occur, was considered. It was suggested that a school should be opened somewhere near Karimganj. The idea was, however, given up. Local officers said that men would merely pass through the school in order to go off and get employment in Dacca, Mymensingh, etc., with private employers. It was then decided that a local examination from time to time by the Superintendent of Provincial Surveys of uncertificated patwaris and intending candidates would meet all requirements, and would avoid the expenditure consequent upon maintaining a school.

Supervisor kanungos' touring and inspection.

9. There were two additions to the number of supervisor kanungos in the first grade in consequence of the formation of new circles in Goalpara and Sibsagar. The sanctioned scale on the 31st March 1903 was 39 in the first grade and 21 in the second grade. The number actually entertained on that date was 23 in the first grade and 37 in the second grade. The statement in Appendix A gives the area of each supervisor kanungo's circle and the number of mandals or patwari's circles in the cadastrally-surveyed portion of the province. The average size of a supervisor kanungo's circle is :—

Assam Valley	295,507	*bighas.*
Sylhet	234,381	„
Cachar	250,310	„

The amount of touring performed by supervisor kanungos fell short in many cases of the prescribed minimum, *viz.*, 200 days per annum. In Jaintia all the kanungos toured for over 400 days in the two years. The supervisor kanungos of 5 out of the 8 circles of Nowgong were on tour for over 400 days and in one of the three remaining circles the required minimum was almost reached. Darrang has 6 kanungos and three

of them were away from headquarters more than 400 days, but none of the Lakhimpur men were sufficiently active, a fact which may well have some connection with the deplorable condition of the Land Records in the sadr subdivision of that district. Successive Sub-Deputy Collectors must share the blame that attaches for this state of things, but it must be admitted that there are peculiar difficulties with the mandals in this district. As mentioned in the preceding paragraph, competent men are attracted to the many better paid appointments offered by the Railway, the tea gardens, and other industrial enterprizes in and round Dibrugarh. In none of the 8 circles of Cachar was a sufficient amount of touring done. This is attributed to the fact that the kanungos were taken away from their regular duty for about 2 months to carry out census abstraction work and that they had to devote a large part of their time to clearing up arrears of the settlement office. Most touring was done by Gobinda Nath Datta, supervisor kanungo of the Dhing circle in Nowgong. He spent 472 days on tour.

The Government surveyor at Gauhati died early in 1902 and the post has since been abolished. No account of the work done by him before his death has been furnished. The surveyor at Dibrugarh spent 209 days only on tour. He was wholly engaged in the survey of waste land grants and lands taken up by the Assam-Bengal Railway and for the Berry-White Medical School, and did not do any Land Records work.

There was comparatively a decrease in the amount of checking done by supervisor kanungos. The total length of check lines run was 3,119·43 linear miles, or 11·80 linear miles per square mile of fluctuating cultivation, against 1,620·57 linear miles, or 9·74 linear miles per square mile of fluctuating cultivation in the year 1900-1901. Considering that the present report deals with a period of two years, this outturn is not satisfactory. This figure is exclusive of 241·99 linear miles of check lines run by temporary supervisor kanungos in Kamrup during 1902-1903 in connection with the resettlement of the district.

The minimum amount of checking under the rules hitherto in force has been 4 linear miles per annum per square mile of fluctuating cultivation, or 8 miles for the two years. This rule may require some modification hereafter in view of the Chief Commissioner's Circular No. 42R., dated the 22nd December 1902, directing that more attention be given to checking with the map and short check lines. But for the present the kanungo's work can only be judged by the old standard. The minimum of 4 miles was achieved in all the circles except four. One of these, the Eastern circle of the Sibsagar sadr subdivision, was redistributed and formed in its present shape only in the year 1902-1903 by dividing the old Eastern circle into two. Checking was also deficient in the Kalaigaon circle, in Mangaldai, the town circle in Nowgong, and the Dibrugarh circle in Lakhimpur sadr. The greatest length of check line (136·33 linear miles) was run by Rati Ram Das, supervisor kanungo of Bijni and first and second circles Sidli in Goalpara. Kamal Nath Das of Sidli and Gobindaram Datta of Dhing circle in Nowgong come next in order with 131·51 and 131·00 linear miles of check line, respectively. Leaving out of consideration Jaintia and Cachar, where the amount of fluctuating cultivation is small, the shortest length of check line was run in the Dibrugarh circle in Lakhimpur. The supervisor kanungo Sibnath Sarma of the Majuli circle in Jorhat and his substitute, Kamaleswar Sarma, ran 135·76 linear miles of check lines. The work of Parsuram Barthakur, supervisor kanungo of the Tinsukia circle in Dibrugarh, was found to be most unsatisfactory by the Superintendent of Provincial Surveys during his last inspection. He ran 20·77 miles of check line. An area of 494,879 acres was tested by supervisor kanungos without check lines.

Tours and inspection by Sub-Deputy Collectors.

10. Among district Sub-Deputy Collectors, those in charge of Cachar sadr, Jaintia, Mangaldai, and North Lakhimpur failed to do the required amount of touring, and among Tahsildar Sub-Deputy Collectors those at Kanairghat, Hajo, and Mangaldai tahsils fell short of the prescribed minimum. The Silchar subdivision was without a Sub-Deputy Collector for 78 days. There were also several changes of officers. But Babu Purna Chandra Mitra, who was in charge 503 out of 730 days, was at all events active in checking patwaris' survey by check lines, of which he ran 56 miles, and he tested a larger area without check line than any other Sub-Deputy Collector. Srijut Bharat Chandra Das, Sub-Deputy Collector in charge of the Samaguri tahsil (Nowgong), spent the greatest number of days (424) on tour, Babu Dwaraka Nath Chaudhuri (Dhubri) and Srijut Gunahas Goswami (Roha tahsil, Nowgong) coming next with 382 and 373 days, respectively. The two Sub-Deputy Collectors (Babu Giris Chandra Nandi Mazumdar and Srijut Gopal Chandra Puri Bhuiyan) in charge of the Boko tahsil were on tour for 390 days. Judging by the amount of checking by check lines, Babus Mahendra Chandra De of Tezpur and Dwaraka Nath Chaudhari of Dhubri exercised

the most careful supervision over Land Records work. Most other Sub-Deputy Collectors also inspected mandals' work sufficiently. The work of Babu Purna Chandra Mitra has been already noticed. Considering, however, the unsatisfactory condition of Land Records work in the Dibrugarh subdivision, the inspection done there by Sub-Deputy Collectors leaves much to be desired. Babu Ram Kumar Aditya was there for 510 days. He was transferred and replaced by Babu Janaki Nath Das No. I, who has made a good effort to make up for previous deficiencies, and has run nearly as great a length of check line in 123 days as his predecessor in four times that period. Babu Mahendra Chandra De at Tezpur ran the greatest length of check lines (81·49 linear miles), and Babu Giris Chandra Nandi Mazumdar (Kamrup) discovered the largest area (61·8 acres) of concealed cultivation. Of the other Sub-Deputy Collectors in the Assam Valley who discovered areas of concealed cultivation the following may be mentioned: Maulvi Saifuddin Ahmed (32·60 acres), Kamrup; Babu Mahendra Chandra De (17·03 acres), Darrang; and Srijuts Annada Charan Bhattacharja (21·00 acres) and Benudhar Rajkhowa (31·91 acres), Sibsagar. The Deputy Commissioners, Cachar, Goalpara, Darrang, and Nowgong, and the Subdivisional Officers, Hailakandi and Barpeta, report that the Sub-Deputy Collectors under them did their work efficiently. These are Babus Purna Chandra Mitra and Haris Chandra Sen (Cachar), Dwaraka Nath Chaudhuri (Goalpara), Mahendra Chandra De, Jajneswar Das Gupta, Prabhat Chandra Chatterji, and Munshi Didaruddin Borah (Darrang), Babus Radha Mohan Das and Harendra Kumar Ghosh and Srijuts Gunahas Goswami and Bharat Chandra Das (Nowgong), and Babus Debendra Kumar Mukherji and Janaki Nath Das (Barpeta). I concur in these commendations, particularly in the case of Babu Mahendra Chandra De, lately of Tezpur, but now promoted to be an Extra Assistant Commissioner. Babu Krishna Kumar De also deserves some mention; he was in charge of the colonisation of the Langai-Singla disforested area, a difficult and arduous task which he carried on creditably in spite of ill health. Srijut Hem Chandra Goswami suffered from ill health, and was on leave 152 days.

Survey qualifications of tahsildars and mauzadars.

11. All the tahsildars in the province have qualified in practical surveying, with the exception of one who is exempted and another who is officiating in the Darrang district.

Of the 132 mauzadars in the Assam Valley, 36 possess first-class and 48 second-class survey certificates. The number of qualified mauzadars has been steadily increasing. The mauzadari system has been recently extended to the Surma Valley also, and four mauzadars have been appointed in the sadr subdivision of the Cachar district.

Inspection and testing by tahsildars and mauzadars.

12. In the Assam Valley districts, those tahsildars (who are not Sub-Deputy Collectors) did on the whole a fair amount of testing of mandals' papers. The tahsildars of Kamrup (with one exception) and Darrang examined the papers of all the mandals in their tahsils. Srijut Cheniram Das of the Rangia tahsil, Kamrup, did very little in this direction. He has now been superseded by Srijut Udoy Chandra Barua. They have not inspected the work of a single mandal. Srijut Santiram Hazarika of the Nowgong sadr tahsil examined mandals' papers sufficiently, but his testing of field work was not quite sufficient. The same applies to Srijut Banga Chandra Chaudhuri of Nalbari in Kamrup.

No tahsildar or naib-tahsildars in the Surma Valley made any inspection of patwaris' work. They are generally a different class of officer to the tahsildar of the Assam Valley districts. Where the tahsildar is a Sub-Deputy Collector he must test and supervise the mandals, for there is no one else to do it, as the district Sub-Deputy Collector is not allowed to work within the jurisdiction of his tahsildar colleague.

The mandals' work receives fair attention from mauzadars. Seven out of the 8 mauzadars of Kamrup, all the mauzadars of Darrang, and 29 out of the 34 mauzadars of Nowgong examined mandals' papers and tested their field work. The number of mandals whose papers were checked by these mauzadars is 173. Five of the mauzadars of Dhubri tested the papers of 16, and examined the field work of 12, mandals. Five mauzadars in Nowgong did but little in this direction. The Deputy Commissioner, Nowgong (Mr. Emerson), observes that "mauzadars with few exceptions do as little work as they can and devote all their attention to collections. But this work leaves them plenty of spare time, and they might easily make themselves useful if they felt inclined." The mauzadar of Ghugua who did no work in 1901-1902 improved on being taken to task by the Deputy Commissioner, and his record for 1902-1903 is good. The mauzadars of Lakhimpur did very little inspection of mandals' work. Only four of them examined papers and tested field work, and that of only a few mandals. There is no doubt that there is much room for improvement in the amount of inspection done by these officers.

Inspection of Land Records staff by Deputy Commissioners, Subdivisional Officers, and Extra Assistant Commissioners.

13. With the exception of the Subdivisional Officer of North Lakhimpur, all Deputy Commissioners and Subdivisional Officers inspected the work of the Land Records staff to some extent. But there has comparatively been a decrease in the amount of inspection done by these officers. The papers of 547 mandals and patwaris were examined by Deputy Commissioners during the two years under report, against 331 in 1900-1901. The Deputy Commissioners of Sibsagar (Mr. Arbuthnott and Mr. Reid), Sylhet (Mr. Lees and Mr. Arbuthnott), Kamrup (Major Gurdon), Darrang (Captain Cole and Messrs. Strong and Lees), and Nowgong (Mr. Emerson) did the largest amount of inspection. The papers of 472 mandals and patwaris were examined by these officers alone, and in addition Captain Halliday, Captain Cole, and Mr. Arbuthnott ran check lines. The inspection done by the Deputy Commissioners of Goalpara and Lakhimpur was insignificant. The latter district especially needs more inspection.

Subdivisional Officers and Extra Assistant Commissioners checked the work of 192 mandals only (against 236 in 1900-1901 alone). Munshi Mahibuddin Ahmad of Barpeta, Mr. Strong and Babu Jajneswar Das Gupta of Mangaldai, and Mr. Clarke of Jorhat tested the work of 157 mandals. In North Lakhimpur no inspection of Land Records work has been done by the Subdivisional Officer for the last three years. This continual neglect by the Subdivisional Officer is disappointing, and it has a perceptible effect on the quality of the work. Besides work above described, the field work of 67 patwaris and mandals was tested (39 by Deputy Commissioners and 28 by Subdivisional Officers and Extra Assistant Commissioners) without check lines. Amongst the few Extra Assistant Commissioners whose duties left time for this kind of work may be mentioned Mr. R. N. Thompson at Dhubri and Maulvi Muhammad Abdulla at Jorhat.

State of Land Records.

14. The state of the Land Records as disclosed by inspection varies from district to district and from subdivision to subdivision, and it is not going too far to say that perceptible improvement is often traceable to the personal attention given to the subject by the District or Subdivisional Officer. That the zeal and activity of the Sub-Deputy Collector in charge should make a difference is no matter for surprise. It certainly has a marked effect, and where there is a Sub-Deputy Collector whose duties are purely to superintend land records—and not also collect land revenue (as is the case with the Sub-Deputy Collector tahsildars) results are better than in the latter case. No doubt also local circumstances affect the Land Records, *e.g.*, in Jaintia the changes in fields are very few, so that the patwari has very little survey work. On the other hand, better men are available in the Surma Valley for the pay than in the Assam Valley. Hence, the Jaintia records appeared to the Superintendent of Provincial Surveys, on inspection in May 1902, well kept. No doubt the maps and records are neat and well kept, but inspection in the field reveals here as elsewhere defective crop registration and defective registry of new names. In Lakhimpur sadr the records are in a bad state, due no doubt in some measure to adverse local circumstances. It is very difficult to get competent mandals and kanungos in this district, where living is dear, education backward, and many posts on tea gardens, etc., available to the competent. In North Lakhimpur the land records are better, though even here they want more attention than they get. In Darrang sadr, which I passed through in March, the mandal's work had received a great deal of care and attention from superior officers with corresponding good results. In Kamrup and Sibsagar, where settlement proceedings have touched every entry in every village as inspection can never do—a great many discrepancies between the records and the actual state of affairs are brought to light. As was known before, the correction of names of pattadars was very defective. In fact, the people dread the expense and trouble of a mutation case and avoid reporting cases of transfer. Probably also they bring pressure to bear on the mandal to prevent him reporting it as required by rule. Then, even when mutation has been formally effected, the delays in making the necessary changes in the papers are tremendous. The *parwana* lies with the tahsildar or mauzadar for months without action. This is a matter constantly brought to the notice of District Officers—as also the great delay in distributing mandals' pay. The crop registers also are frequently defective. The mandal must be compelled to record the crops correctly each year and not merely recopy the last year's entries.

Changes in the system of Land Records.

15. Some new rules and regulations for the maintenance of land records were brought into force in the years under report, *e.g.*,—

(*a*) The maintenance of a duplicate copy of the annual *jamabandi* has been abolished.

(*b*) The mandals have been required to prepare lists of newly-taken and abandoned fields.

(*c*) A new form of mandal's diary has been introduced with numbered pages.

(*d*) The promotion, dismissal, and appointment of the Land Records staff (mandals and patwaris) have been placed more entirely in the hands of District Officers.

Condition of survey marks.

16. The condition of survey marks in the province on the 30th June 1902 is given in Appendix B. The increase in the total number of marks is mainly due to the inclusion of the figures for Cachar for the first time in this statement. Demarcation of areas surveyed by local agency has also added to the number. The number of marks lost or left unvisited was very large in Cachar sadr, Kamrup, and Sibsagar. The percentage of marks left unrepaired was also high in the last two districts as well as in Pratabgarh (Sylhet). The attention of District Officers has been specially invited to this matter. On enquiry, the number of marks shown against Pratabgarh was found to be in excess of the actual number; moreover, 1,129 marks indicating stations on boundaries of grants and on subtraverse lines in villages were considered unnecessary for any practical purpose, and sanction has been given to abandoning these marks. A large number of marks have fallen into disrepair in the Barpeta subdivision of the Kamrup district, where it has become very difficult to keep the existing *dhips* in order for want of labour. Many villages have been wholly or partially deserted as the results of the earthquake, and there are no raiyats to repair the *dhips*. The number of lost or irreparable marks is increasing annually.

Demarcation advances.

17. The difficulty and delay in collecting the advances made for boundary demarcation were noticed by the Chief Commissioner, and a communication on the subject was addressed to District Officers. Statements have been received from them showing the arrears outstanding for recovery and the years and area to which they relate. These statements are being checked with a view to ascertain whether the amounts reported by the Deputy Commissioners as irrecoverable can fairly be written off.

Mauza-book.

18. The mauza-book was designed to provide a permanent source of information for general administrative and fiscal purposes, and especially to afford a continuous record of prices, crops, coercive processes, etc., etc., for guidance at the time of the reassessment of the land revenue demand.

In 1902 the mauza-book was introduced into the last of the districts of Assam proper, *viz.*, Nowgong. It was no longer kept up to date in Sibsagar and Kamrup when settlement operations in those districts commenced. No report has consequently been obtained from these two districts on the state in which the mauza-book was at the time it was discontinued. Excluding these two districts, the mauza-book is now being maintained in 2,611 villages (all cadastrally surveyed) with an aggregate area of 2,363 square miles. The statistical statements have been written more or less up to date in Nowgong, Mangaldai, and Tezpur, but the work is very backward in Dibrugarh and North Lakhimpur, owing to the apathy of the Sub-Deputy Collectors in charge. The rough classification of *rupit* land by mandals under the mauza-book rules has made excellent progress in every district, except Nowgong, where it has not yet been started. One thousand and twenty crop cuttings were carried out under the mauza-book rules during the two years under report. Out of these, 893 experiments were made by supervisor kanungos and mandals, and the remaining 127 by officers of superior rank, chiefly Sub-Deputy Collectors, Tahsildars, and mauzadars. Comparatively few experiments (only 51 in two years) were made in the Dibrugarh subdivision, and none of these were made by a Sub-Deputy Collector. The two Sub-Deputy Collectors in Dibruguarh—Babu Bholanath Das and Babu Ram Kumar Aditiya—appear to have paid very little attention to mauza-book work. Except Major Gurdon in Kamrup, Captain Playfair in Nowgong, and Captain Cole in Darrang, District and Subdivisional Officers do not appear to have taken great interest in this work.

In Kamrup and Sibsagar, which are now under settlement, the mauza-book is being constantly referred to by the Settlement Officers, but they are unable at present to pronounce on the precise degree of utility attaching to it. The crop experiments have almost certainly been of value, as also the rough classification into two classes of all *rupit* land. I have no doubt also that in reporting on their groups for assessment the Settlement Officers will find it of great use to have for reference a record of prices, coercive processes, population, etc.

Enquiry into Sibsagar and Lakhimpur embankments.

19. An important enquiry was held in the cold weather of 1902-1903, under the orders of the Hon'ble the Chief Commissioner, into the question of restoring certain protective embankments in the Sibsagar and Lakhimpur districts. A Committee was

appointed for the purpose, consisting of four official and three non-official members. The official members were myself, as President of the Committee; Mr. W. J. Reid, Deputy Commissioner, Sibsagar; Rai Sahib Matadin Sukul, Executive Engineer, on special duty and my Assistant, Mr. Basu. The non-official members were Srijut Someswar Barua, an *ex*-tahsildar of Sibsagar, Srijut Kali Prasad Chaliha, Pleader, and Srijut Ganga Govinda Phukan. I paid three visits to Sibsagar in December 1902 and in February and April 1903, and held several meetings of the Committee to discuss matters bearing on the enquiry. The investigation into the engineering aspects of the enquiry was carried out by Rai Sahib Matadin Sukul, and Mr. Basu did the same with regard to the agricultural and revenue side of the enquiry. The proposals of the Committee were finally discussed at a meeting held at Sibsagar on the 6th April, and their recommendations were shortly after submitted by me to Government. The principal rivers dealt with were the Dehing, the Disang, the Dikhu, the Dalka, and the Namdang. These rivers are believed to have been embanked in the days of the Assam Rajas, and it is certain that large areas of land now flooded were formerly under cultivation. These areas it is now proposed to reclaim. The labours of the Committee closed with the submission of my report. Orders have since been passed by the Hon'ble the Chief Commissioner on the recommendations of the Committee, and several important works are to be taken in hand by the Public Works Department during the ensuing cold weather.

CHAPTER III.

SURVEY, ETC.

Synopsis of the work done.

20. The Provincial Survey Detachment undertook during the two years operations similar to these performed by the detachment in previous years and completed the following areas :—

(*a*) Topographical survey—

	Square miles.
Kamrup	12·18

(*b*) Traverse and boundary survey of tea grants—

Kamrup	23·17
Darrang	35·69
Nowgong	39·16
Sibsagar	21·71
Lakhimpur	48·00
Total	167·73

(*c*) Traverse for cadastral survey—

Cachar	3·15
Kamrup	67·00
Darrang	26·40
Sibsagar	12·00
Total	108·55

(*d*) Traverse survey of area already cadastrally surveyed—

Kamrup	113·99
Total	402·45

Besides this, a distance of 8·59 miles of the boundary line between Sylhet and Hill Tipperah was relaid by the detachment for the settling of disputes with the Tipperah authorities.

Plane table traverse of an area of 1·40 square miles was effected by local agency in the Sylhet district in connection with the survey of *ilam* estates and *khas* land, etc.

All the cadastral survey of the two years (an area of 3·52 square miles in Sylhet and 24·25 square miles in Darrang) was carried out by local agency.

Traverse survey and its cost.

21. Traverse survey was, as before, carried out in both valleys of the province. Mr. C. A. O'Donel being on deputation, the supervision of the work devolved entirely on Mr. Shaw. The traverse of tea grants is primarily for topographical purposes, but incidentally it has revealed a fact important to the Administration. It seems certain that in many cases planters are holding a much larger area than is covered by their leases. All such cases will be brought to the notice of the Deputy Commissioner in future. Only an insignificant

area was traversed in the Surma Valley, and the total area of the season 1901-1902 and up to 31st March 1903 of the season 1902-1903 was only 402·46 square miles, a short outturn, due to the area dealt with being scattered, and the country hilly and difficult. The very great delay and irregularity in the supply of labour by proprietors of tea grants for clearing boundaries is also to a large extent responsible for the short outturn, and consequent high rate of cost. The total cost incurred by the Survey Detachment on this work was Rs. 24,247-5-2. The average cost per square mile was as follows :

(1) Traverse survey of tea grants—

	Rs.	a.	p.
Kamrup	47	15	4
Darrang	81	0	1
Nowgong	75	11	10
Sibsagar	76	13	3
Lakhimpur	88	12	9

(2) Traverse survey of areas for cadastral survey or already cadastrally surveyed by local agency—

	Rs.	a.	p.
Kamrup	35	13	4
Darrang	82	8	6
Sibsagar	78	11	5
Cachar	187	10	5
(3) Topographical survey	36	2	6

The very high rate in Cachar is due to the smallness of the area, its distance from the main field of action (Brahmaputra Valley) and difficulty in getting proper boundary lines cleared. The rates for Kamrup compare very favourably with other districts, and are due to the very good arrangements made by the Deputy Commissioner and Settlement Officer for clearing boundaries and to the area dealt with being in compact blocks.

The area traversed in Cachar lies in the disforested portion of the Inner Line reserve.

The bulk of the area traversed for cadastral survey in Darrang has been surveyed in detail by local agency, and prisms are being obtained for the demarcation of trijunction points in this area. In the area surveyed by local agency prior to professional traverse with the theodolite the stations of the plane-table traverse were utilised as far as possible. Theodolite stations, in all other areas traversed for cadastral survey, have been marked with mounds and boughs.

An area of 67·00 square miles traversed in Kamrup for cadastral survey represent villages requiring resurvey in connection with the resettlement of the district.

Cadastral survey—Darrang.

22. In the sadr subdivision of the Darrang district the cadastral survey of an area of 24·25 square miles was carried out by local agency on the basis of theodolite traverse by the Provincial Survey Detachment. The work was done by 13 mandals and 19 candidates for mandalship under the supervision of supervisor kanungos Gangaram Das and Manuram Talukdar and under the general superintendence of Babu Mahendra Chandra De, Sub-Deputy Collector. The work was tested by the Deputy Commissioner, Sub-Deputy Collector, supervisor kanungos, tahsildars, and mauzadars by 100·92 linear miles of check lines (or 4·16 linear miles per square mile of the area surveyed) and found correct—a satisfactory result, and creditable to the Sub-Deputy Collector and kanungos concerned. A further area of 10 square miles was taken up for cadastral survey in mauzas Chutia and Bishwanath during the field season of 1902-1903, but the final results of the operations have not yet been reported.

The cost incurred for interior survey and preparation of papers in Darrang came to Rs. 250-10-0 only (*viz.*, cost of instruments Rs. 105-10-0 and rewards to supervisor kanungos, etc., Rs. 145).

Cadastral survey by local agency has resulted in an increase of 1,164 *bighas* in the settled area (as shown below) and Rs. 1,118 in the revenue demand :—

Settled area as found by survey (*bighas*)	21,527
Settled area as formerly returned (*bighas*)	20,363
Increase (*bighas*)	1,164

Cadastral survey—Sylhet.

23. A small area (3·52 square miles) was surveyed cadastrally, partly on the basis of theodolite traverse and partly on plane-table traverse by local agency. The work was carried out by a few *ilam* patwaris under the supervision of a kanungo. The bulk of the area lay in the Satgaon Dinarpur Hills and appertained to a relinquished tea grant. The work was tested by the subordinate staff by running 4·85 linear miles of check lines. This brings the *ilam* survey to a close. There are a few small scattered blocks of *khas* and temporarily-settled lands still lying here and there unsurveyed. These will be gradually brought under survey by local agency.

In addition to this, a rough cadastral survey of an area of 18·93 square miles in the Langai-Singla disforested area was made by local agency under the supervision of Babu Krishna Kumar De, Sub-Deputy Collector, who has been specially deputed to do this work.

The cadastral survey and settlement of the *ilam* and other temporarily-settled estates and *khas* lands in Sylhet, which represent the first attempt of the province to deal with both survey and settlement of any considerable area by local agency, was brought to a close during the period under review. The results of the operations have been set forth in detail in the final report of the Settlement Officer, submitted to the Hon'ble the Chief Commissioner with this office letter No. 1064, dated the 14th April 1903. The work done may be briefly summarised as below :—

	Square miles.
Total area traversed—	
(*a*) By the professional party (excluding 134·82 square miles of connections)	416·71
(*b*) By local agency	52·35
Total	469·06
Area cadastrally surveyed—	
299·02 square miles of traverse survey, which worked out on detail survey to	309·83
Boundary survey of grants, etc. (including 7·64 square miles, which was also cadastrally surveyed, and is included in 309·83 square miles)	177·68
Total	487·51
Area settled—	
Outside Pratabgarh	236·00
Pratabgarh raiyatwari tract	39·33
Total	275·63

The total cost incurred amounted to Rs. 1,26,754-3-9. Deducting from this receipts on account of process, mutation, and miscellaneous fees (Rs. 12,824-1-0), the net expenditure was Rs. 1,13,930-2-9. As the same staff was employed on both survey and settlement, any attempt to separate the cost of the two operations must necessarily be only approximate. The Settlement Officer distributes the figures as below :

	Rs.	a.	p.
(*a*) Cost of traverse of 551·53 square miles, inclusive of 134·82 square miles of connections by professional party ...	17,493	10	4
(*b*) Plane-table traverse of 52·35 square miles by local agency	1,048	0	0
(*c*) Cadastral survey of 309·83 square miles, and demarcation, passing of boundaries, and completion of maps of 177·68 square miles of tea grants	57,022	12	6
(*d*) Classification and assessment of 226·12 square miles (this excludes 10·18 square miles of settled area, as it required no classification)	32,482	11	11
(*e*) Classification and re-assessment of Pratabgarh 36·10 square miles (this excludes 3·23 square miles which required no classification)	5,883	0	0
Total	113,930	2	9

These give the following average cost per square mile:—

	Rs.	a.	p.
Traverse survey (excluding area of connection)	39	8	5
Cadastral and boundary survey (including revision)	116	15	5
Assessment (including the 10·18 square miles which required no classification and the area resettled in Pratabgarh) ...	139	3	1
Total	295	10	11

This compares favourably with the cost incurred in Jaintia and Cachar, where the cost rates for the same work were Rs. 322-1-2 and Rs. 378-12-2, respectively. The expenditure would have been considerably lower but for exceptional difficulties in carrying out the work. The area dealt with lay scattered in isolated plots over a large extent of country intermixed with permanently-settled land, tenures were complicated, and the area dealt with was cadastrally surveyed for the first time.

The operations have brought to light an increase of 49,355* *bighas*, or 51·80 per cent., in the cultivated area. Besides, an area of 29,473 acres has been newly settled. Of this, 6,608 acres is cultivated and 22,865 waste.

	Bighas.
* Cultivated area at present settlement	144,633
Cultivated area at the preceding settlement	95,273
Total increase	49,355

There has been an increase of Rs. 48,327, or 14·65 per cent., in the revenue demand, the old and new demand being Rs. 1,17,785 and Rs. 1,66,112, respectively. Excluding the Pratabgarh *raiyatwari* tract, where the revenue has decreased by Rs. 6,720, or 19·13 per cent., the increase in *ilam*, etc., estates is Rs. 55,050, or 39·20 per cent., and the old and new revenue Rs. 68,222 and Rs. 1,23,278, respectively.

Survey and settlement—Langai-Singla.

24. Some mention must be made here of operations that have been in progress for colonising the area disforested in the Langai-Singla Valleys in the Karimganj subdivision of the Sylhet district. Survey and settlement in these tracts have been in charge of Babu Krishna Kumar De, Sub-Deputy Collector, under the control of this Department by special order of the Chief Commissioner, *vide* Secretary's letter No. 385Rev.—279R., dated the 16th August 1901. The valleys were traversed in 25 blocks, *viz.*, 13 in the Langai valley and 12 in the Singla. Detail survey of these blocks has been carried out by the Sub-Deputy Collector with his kanungo and 6 *patwaris*, specially sanctioned for the work. The survey is only a rough one to divide the blocks into allotments of 10 acres each and to separate hilly from flat land. The rates of revenue are to be 5 annas for flat land (per *bigha*) and 1 anna for hill, which is of comparatively little value to raiyats. The total area traversed was 7,436 acres in the Langai Valley and 6,727 acres in the Singla Valley. In June 1902 Mr. Allen submitted to the Chief Commissioner a full report of the work done up to date. Since then, the detail survey of the Singla Valley has been completed.

Allotments have been made to the extent of over 7,000 acres with an annual revenue of Rs. 5,885. The term of settlement is for 15 years, with one year revenue free. In respect of certain sheets which covered land very unattractive to settlers, *viz.*, sheets Nos. 6-10 and 12 Singla Valley, a notice was issued with the sanction of the Honourable the Chief Commissioner to the effect that any person desirous of occupying the land might squat upon it without further formalities. He would be allowed a period of three years from 1st April 1903 revenue free. After that time, survey and settlement to be effected. Attracted by the offer, would-be settlers have inspected the land, but decided they could make nothing of it. All things considered, the results of disforesting this area have not been very encouraging. Babu Krishna Kumar De has worked hard and deserves credit.

CHAPTER IV.

RESETTLEMENT.

Resettlements—Assam Valley.

25. The decennial settlement of the Assam Valley having expired with the official year 1902-1903, resettlement was begun in that year in the districts of Kamrup and Sibsagar. Mr. H. C. Barnes was appointed Settlement Officer of Kamrup in October 1902 and with him, as Assistant Settlement Officers, Munshi Muhibuddin Ahmad, Extra Assistant Commissioner, and Babu Debendra Kumar Mukherji, Sub-Deputy Collector. For Sibsagar district Mr. L. J. Kershaw was appointed and commenced work in October 1902; his Assistants are Srijuts Radha Kanta Handiqui and Rajani Kanta Bardalai, both Extra Assistant Commissioners. In the appendix will be found a statement of the progress made

in the field during 1902-1903 (Appendix C). There was no office work during the year under review, and the field work of the first season was not finished on 31st March 1903, which is the end of the period with which this report deals. The Settlement Officer of Kamrup, however, has shown results up to the end of May 1903. He has to deal with 2,162 villages, of which 607 are described as "fluctuating". The Settlement Officer of Sibsagar has 1,617 villages, of which 212 are fluctuating. The precise definition of a fluctuating village is a matter under consideration, but, generally speaking, it signifies a village in which land is frequently abandoned and new land taken up. Such villages are frequently marked by being near the river; having only or principally mustard and other cold-weather cultivation; having few or no permanent habitations, the land being cultivated by men who leave their homes and live in a hut for the cold weather. The prevalence of tall grass and absence of trees is another mark. Trees will not grow in land that is flooded. No one of these tests is final and conclusive, but with practice the fluctuating village is easily differentiated from one where the cultivation is permanent and old established, though it may be difficult to say precisely where the difference lies. It has been decided (amongst many matters that have been discussed and still are under discussion) that the lease in a permanent village will be a periodic one in all cases, and no annual leases will issue. It is probable that the management of permanent areas in other respects also will differ from that of fluctuating areas.

Extent of operations.

26. The Settlement Officer, Kamrup, undertook the map corrections and revision of records in 1,411 villages, and he completed it in 1,373. He also classed the land in 115 villages and attested maps and records in 39.

The Settlement Officer, Sibsagar, concentrated his staff on the 2 subdivisions of Jorhat and Golaghat, especially the latter, and settlement was put in hand in 791 villages: maps were corrected in 633; maps and records in 414; land classed in 61. As already pointed out, these figures are to the end of March only, whereas the figures for Kamrup are to the end of May. Each Settlement Officer has selected a group of a convenient number of villages. Mr. Barnes has selected the tahsil of Bajali with 115 villages; Mr. Kershaw the Golaghat tahsil with 155 villages. In the present recess they will prepare their group reports and show present and proposed incidence of revenue per soil factor.

Subordinate staff.

27. The Settlement Officers entertained the following extra staff:

Kamrup.	Sibsagar.		Rs.
1	2	Inspectors on	60
4	...	Ditto	50
...	1	Classing Inspector	60
...	1	Supervisor kanungo	40
10	2	Ditto	30
100	19	Additional mandals	8
...	5	Classers	25
...	3	Chainmen	8
7	...	Ditto	7
...	12	Apprentice mandals	4

This is not reckoning the office establishment (each Settlement Officer had a clerk, etc., etc.), and is in addition to the permanent Land Records staff. It should be noted that each Settlement Officer took over from the Deputy Commissioner the management of the kanungos and mandals, undertaking to manage what is called in Assam the "regular" annual settlement and hand over to the Deputy Commissioner the papers showing current demand, pending the conclusion of the revision. Each mandal was kept strictly to his own circle, and with occasional extra help undertook the revision of maps and records. It was decided that, although by this method supervision was more difficult, advantages in another direction outweighed the objections. The mandal, to begin with, should know his own circle better than a new comer. Further, it is well that he should be responsible for his own circle, where the blame for mistakes discovered hereafter will fall on his own head.

Attestation and mutation.

28. In the course of attestation it was decided to effect mutation also by a method which constitutes a new departure for Assam. At the time of revision of records a column was added to the *dagchitha*, in which was entered the name of the person who was in possession and who ought to hold the *patta*, but did not for want of having taken out the regular legal

proceedings, which involve amongst other things the issue of a formal notice. The Deputy Commissioner may, of his own motion, institute such proceedings, but he cannot, under the ordinary procedure, erase one name from the General Register and record another without the aforementioned formal notice. The notice is in most cases a mere form, especially when the predecessor in interest is dead, and it threatened to become an intolerable burden to the Settlement Officers, who discovered, in thousands, cases where mutation should be effected, where there was no dispute and where the complete elucidation of all facts was easy and certain in the village to village visitation that the Settlement Officers and Assistant Settlement Officers were making.

The Hon'ble the Chief Commissioner, therefore, decided to exercise the powers conferred by rules having the force of law and framed under Chapter IV of the Regulation, and ordered that on the occasion of this settlement the new registers might be prepared (*i.e.*, mutations effected) from such authentic information as was available. Such authentic information is now available in the record prepared at revision as already explained. This is attested by an Assistant Settlement Officer who makes local enquiry, calling up the party or parties concerned. Then, unless there appears to be any objection, the name of the person in possession is ordered to be transferred to the column for settlement-holder. Hereafter the new *patta* will be issued accordingly, but there is nothing to prevent any person aggrieved making complaint in Court to the Settlement Officer or the Deputy Commissioner. In practice, however, there is much less fraud and mistake in the changes enquired into in the village *coram populo* than in changes effected in the tainted atmosphere of the cutcherry. Both the Settlement staff and the people are relieved of a burden—the Settlement staff are saved the issue of thousands of notices, the people are saved the fees payable on such occasions and the journey to a distant court-house to petition for mutation.

General remarks.

29. It may be stated generally that the resettlement has so far proceeded without a hitch. The people have been continually consulted by the Settlement Officers, especially in framing their land classes and assigning factors, *i.e.*, estimating the relative value of the different classes. The land classes the Settlement Officers have formed, together with the factors sanctioned by the Chief Commissioner, are as follows :—

	Kamrup.	*Factor.*	*Sibsagar.*	*Factor.*
Arable land.	*Bordhan toli* i. Clay or loam	20	Low clay soil	16
	Bordhan toli ii. Sandy, etc.	16	Low sandy soil	12
	Laghan toli i. Clay or loam	16	High clay soil	9
	Laghan toli ii. Sandy, etc.	12	High sandy soil	7
	Kharma toli i. Clay or loam	13	Low *charanpara*	21
	Kharma toli ii. Sandy, etc.	8	High *charanpara*	13
	Ahu toli i. Clay or loam	9	Deep flooded	4
	Ahu toli ii. Sandy, etc.	7	Partially flooded	12
	Bao toli (No soil distinction)	9	*Chechukiya* (or shaded)	6
	Jalaton or flooded land (ditto)	5		
Homestead.	I.	24	*Bhal bari*	24
	II.	18	*Bari*	18
	III.	16	*Takala bari*	9
	IV.	10		
Miscellaneous	(*Faringati*)	5 or 6	Miscellaneous (*Faringati*)	6

The Settlement Officers used a different nomenclature, and the classes are more minute in Kamrup, but substantially they are the same. The *bardhán toli* and *laghan toli* (*i.e.*, lands fit for growing *bardhán* and *laghan dhán* respectively) of Kamrup are the *da* or low arable land of Sibsagar. *Kharma toli* and *ahu toli* are equivalent to the "high" or *bam* land of Sibsagar.

The expenditure up to the 31st March is shown in the Appendix. In Kamrup about Rs. 13,700 and in Sibsagar about Rs. 14,700 was spent. The expenditure per square mile of areas completed is Rs. 8·75 for Kamrup and Rs. 21·39 for Sibsagar, but operations are not yet sufficiently advanced to enable us to draw any useful inference therefrom.

The Settlement Officers entered into their duties heartily and overcame all difficulties with great success. Their Assistants worked well. The Settlement Officers also showed great discrimination in selecting the subordinate staff, such as inspectors and additional kanungos. Among the inspectors, I may mention two whom I saw at work, *viz.*, Puaram Das in Golaghat—a kanungo drawn from the Nowgong district, and Laghanu Ram Das in Kamrup. He is a kanungo of Kamrup. Both were evidently capable men, whether in survey work, land classing, or dealing with the people.

Mr. H. L. Thomas, Assistant Commissioner, was temporarily attached to Sibsagar, and Mr. J. P. Dunlop, Assistant Commissioner, to Kamrup. They both rendered useful assistance.

CHAPTER V.

AGRICULTURAL EXPERIMENTS.

30. *Season.*—The two seasons were characterized, the first by a very dry spring and the second by an unusually wet spring and summer. The rainfall during March and April—a very important period for the potato crop—was as follows :—

The Experimental Farm, Upper Shillong.

1901	...	...	...	...	...	2·14 inches.
1902	...	...	...	...	...	11·88 „
Normal	...	...	...	...	...	6·07 „

In 1901, except for the want of rain in March and April 1901, the season was favourable. In 1902, the abundant spring rainfall was favourable to the potato crop, but as it continued to rain heavily through May and June, it encouraged the spread of potato disease, which was unusually rife last year. The total rainfall during the potato season of 1902 (March to June) amounted to 42·89 inches, against 34·88 inches in the previous year. Continuous rain and want of sunshine also told prejudicially upon fodder grasses, pumpkins, and root crops in 1902.

31. The principal crops tried at the farm during the two agricultural seasons were as follows :—

Potatoes.—Owing to want of rain in March and April, the crop of 1901 did not germinate properly, and the yield was consequently very poor. It amounted to only 38·4 maunds from an area of three quarters of an acre. The season illustrated the danger of sowing "cut sets," where irrigation is not available. In ordinary seasons, "cut sets" do just as well as whole tubers, but in the absence of moisture in the soil, they are apt to lose their vitality, while whole tubers remain sound for a long time under ground.

32. The potato crop of 1902, on the other hand, gave a satisfactory yield. Eleven different varieties were grown. The seed of five kinds was obtained from Europe during the year, and of five others in the previous year. Magnum Bonum alone came originally from Mussoorie. The total area sown was $\frac{9}{10}$ths of an acre and the yield was 158½ maunds, *i.e.*, at the rate of nearly 6½ tons per acre. The outturn varied from 4·83 to 12·82 times the quantity of seed sown, and amounted on the average to 10·3 times the seed of all the varieties taken together. A record has been kept of the yield of each variety. The best was a kind called "Early Regent." Magnum Bonum yielded over 10 fold. During 1902 the previous practice of sowing "cut sets" was abandoned, and only whole tubers were sown. The early rains were very favourable to germination, but the continuance of heavy rain in May and June brought on disease. The crop was completely stripped of leaves and had to be taken up about a month before it was expected to ripen. But for this circumstance, which seems to have become a frequent occurrence in these hills, the yield of potatoes would have been even greater.

33. Disease was unusually rife last year, and Khasia cultivators suffered great losses through it. Specimens of diseased plants and tubers were sent to Dr. Butler, Cryptogamic Botanist in India, for examination. He found the disease to be the same as Irish blight (*Phytophthora infestans*) and advised repeated spraying with Bordeaux mixture as a remedy. This remedy had been tried at the farm in two previous seasons, 1900 and 1901, but in the extremely wet climate of Assam the mixture is washed off the plants and is ineffectual.

34. The blight above mentioned is associated in these hills as well as elsewhere with another disease known as "wet rot." The Khasia variety of potatoes, of which the stock was introduced by David Scott some seventy years ago, is peculiarly liable to wet rot, and last year the loss through this cause was very considerable. Fortunately, at the Experimental Farm, wet rot caused very little loss. The Magnum Bonum was practically free from it. The newly-imported kinds seem to have suffered more. On the whole, Magnum Bonum stands first among the varieties tried in point of freedom from disease and its free growth. Next to it comes Windsor Castle. Early Regent, Harbinger, and Triumph gave heavier yields than formerly, and seem to have improved by acclimatization. They have been grown here since 1898. But taken all round, Magnum Bonum is the best.

35. The department has for several years been distributing Nainital seed potatoes (really the same as Magnum Bonum) among Khasia cultivators, and so this variety is gradually spreading in spite of the fact that the tuber is of the long or kidney shape, whereas for some reason the Khasias prefer the round tuber. The short crop of 1902 led to an increased demand for seed potatoes grown at the farm, but for the same reason the farm stock was limited and none could be distributed in the spring of 1902. In 1903, however, the demand for seed potatoes was still greater, and

the farm stock was insufficient to meet requisitions. In all, 59 maunds of seed were distributed in small quantities among Khasia cultivators and 35¼ maunds were supplied to officials and residents of Shillong. The latter paid for the seed. Except a small quantity of Early Regent and Flower-ball, which was specially asked for, the seed given out was either Magnum Bonum or Windsor Castle. In the distribution of healthy seed potatoes, the experimental farm clearly serves a useful purpose, and there can be no doubt that our potatoes are more healthy and vigorous than the native stock which they are gradually replacing.

36. It was hoped when starting the farm that by growing early varieties of potatoes, it might be possible to escape the heavy rains which set in about the beginning of June and which bring on the blight. We have now tried several varieties of potatoes specially recommended for early ripening, but none of them come to maturity in less than five months, and as it is never safe to sow potatoes in and about Shillong earlier than the first week of February, there is no possibility of the crop escaping the heavy rainfall of June. During the current year a new method is being tried to shorten the period of growth by a fortnight or so, *viz.*, planting tubers that have commenced to sprout. It seems that the best means of raising sound potatoes in these hills would be to grow them as a cold-weather crop under irrigation in places below the frost line.

37. In the annual report for 1899-1900 an account was given of experiments made in that year to test the effect of oilcake as a manure for potatoes. It was then found that the use of 20 maunds of oilcake, costing about Rs. 60, caused an increase of yield of 81 maunds of potatoes per acre, valued at the lowest computation at Rs. 100. The experiment was repeated in 1902-1903, with the result that the increased yield consequent on the use of 20 maunds of oilcake was 41¼ maunds per acre. This was just sufficient to meet the cost of oilcake. The same experiment is being tried during the current year, and from the strongly marked contrast between alternate plots, *i.e.*, those with and those without oilcake, it is believed that the value of the fertiliser will once more be fully demonstrated.

38. *Fodder grasses.*—Rye grass and clover were tried both in 1901 and 1902. Clover appeared to be unable to withstand the heavy rainfall of the Khasi Hills, but rye grass did tolerably well in both seasons. In 1901, it was made into hay of fairly good quality, and gave a yield of 22½ maunds from an area of a little over an acre. In 1902, it was partly grazed down by cattle on the ground and partly turned into silage along with other grasses. Rye grass is a perennial plant. The fields on which it was sown last year are now covered with a mixture of rye grass and wild herbage and will serve as permanent pasture. Three kinds of wild indigenous grass (*Lang-tylli*, *U proot* and *Raishan*) were grown in 1902 with excellent results. They require little attention, and yielded an abundant quantity of sweet herbage. The most useful fodder crop in these hills is maize, or Indian corn, which is grown very extensively as a fodder crop in America and Australia. Last year (1902) it was grown on 1⅓ of an acre. The crop grew well and was preserved as silage.

39. *Fodder roots.*—Various root crops were tried in the two years under report. These were turnip, knol-kohl, beet, mangel, carrot, and a form of beet known as Swiss Chard which is valued for its extensive leafage. None of these did well in either year, and there is little prospect of these fodder crops being grown with profit in the Khasi Hills.

40. *Flax.*—Flax was tried both in 1901 and in 1902. The crop of 1901 grew well, but was laid by heavy rain, and when taken up it was found that the fibre had rotted away. The experiment was repeated in the following year on 8 poles of land. The crop did not grow so tall and thick as in 1901, but was quite healthy. It was taken up in July and retted in water for a few days. The stalks were then dried in the sun. Considerable difficulty was found in extracting the fibre, as special implements are required. Eventually a set of implements was made locally from directions given in Royle's "Fibrous Plants of India," and the fibre roughly extracted therewith. The outturn of fibre could not be exactly ascertained, but it was about 40 lbs. to the acre—which would be poor as compared with the usual yields of flax in Europe. Samples of the fibre were sent for valuation to the Agricultural-Horticultural Society of India, who obtained and communicated the opinion of Messrs. Haworth & Co., Calcutta. They reported that the samples were badly prepared and over-retted, but that they "had the making of a good merchantable fibre if they were properly treated." This was not altogether discouraging under the circumstances. The experiment is being again made this year; precaution will be taken against over-retting and the decortication will be carried out as carefully as possible, with the improvised implements available.

41. *Fruit trees.*—A part of the farm grounds has been planted out with apple, pear, and plum trees. The kinds planted are those ordinarily found about Shillong. A nursery of wild apple (Dacynia) and pear stocks has been maintained for several years. A large number of these were grafted on last year and most of the grafts were successful.

At present there are the following trees :—

	Number.
Grafted pear	36
Grafted apple	14*
Rooted pear cuttings	128
„ apple cuttings	2
Plums (seedlings)	32
Wild pear stocks	113
„ apple stocks	29
Total	354

* (Besides 2 old trees in the compound of the old Sanitarium bungalow.)

The wild stocks will prove useful for grafting thereon the improved varieties of apple, pear, plum, peach, and apricot, which have been imported for the fruit garden. In accordance with the orders of the Chief Commissioner, steps are being taken to start a nursery of fruit trees at the farm in addition to the one at the fruit garden. This Department has taken charge of a large plantation of Spanish chestnut which was planted some 25 years ago by Mr. Freeman, Superintendent of the Old Model Farm at Upper Shillong. The plantation was cleared of pine forest in which it was buried. Many of the trees are now bearing fruit. The Department is also endeavouring to regenerate two large apple trees of Mr. Freeman's time. The trees bear fruit freely, but unfortunately the fruit this year is infected with a grub. It is anticipated that next year, by taking suitable action at the proper time, *e.g.*, exposing the roots and manuring in winter, this disease can be avoided.

42. *Silo.*—Silage has been made at the farm every year since its establishment. Up to 1901, only pit silos were made, and the quantity of the silage was fairly good. In 1901, it was somewhat damaged by water percolating into the pits. Last year (1902), an over ground silo made of pine boards was set up at a cost of Rs. 35, and the silage made in it was as good as could be desired. A pit silo was also used and was filled with chopped green maize. This silage was very good—indeed Mr. Basu considers it the best he has ever seen. The silage made last year proved extremely useful in feeding the farm cows during winter and kept down the fodder bill. The success of our silos has created interest among neighbouring villages, and I understand several of them intend to make silage this year.

43. *The farm cattle.*—The farm herd, which formerly consisted only of Khasi cattle was added to during the period under report by the purchase of eleven cross-bred Patna cows (of which two have died since), one cross-bred Patna bull, and two Bhutia heifers, at an aggregate cost of Rs. 2,335-0-4. The Patna cows (which are of half English blood) possess the reputation of being good milkers. These arrived in the summer of 1902. The cost of their up-keep has proved a serious burden on the finances of the farm, and as yet few of them have given milk. Most of the cows are now in calf, and until they begin to yield, it cannot be said whether they will prove a financial success or otherwise. The cows were unaccustomed to grazing, as they had always been stall fed. They have since learnt to graze, but stall-feeding cannot be entirely dispensed with in case of good milking cows. Two of the eleven imported Patna cows died during the year. The remaining animals are in excellent condition. The Patna bull was imported with a view to cross him with Khasi cows. It is hoped the cross will prove a better milker than the Khasi cow. Bhutia cows are also believed to be good milkers. Of the two Bhutia heifers, one has calved since the close of the year. It did not come up to expectation, and so far there is little difference between the Bhutia and ordinary Khasi cows in respect of the yield of milk. The animal may improve at her second calving.

During the period under report, 26 head of cattle (9 cows, 16 young animals, and 1 bull) were disposed of by sale in order to reduce the herd. They fetched Rs. 190.

On the 31st March 1903, the herd consisted of 9 Patna cows, 2 Bhutia cows, 14 Khasi cows, 1 Patna bull, and 21 young animals, of which 3 were of the Patna breed.

During the two years under report, the farm cows yielded milk to the value of Rs. 811-9-8, and the cost of their up-keep amounted to Rs. 1,275-10-7. The cost of up-keep was heavy solely on account of the Patna cows, which had to be fed chiefly on purchased food.

44. *Pigs.*—With the object of utilising the skim milk produced at the dairy, and of introducing an improved race of swine in these hills, 4 pigs were imported from Calcutta in December 1902 at a cost of Rs. 432-11-3. The four animals included one Australian boar, one Australian sow, one English sow, and one cross-bred sow. Virtually they are all of English stock. The boar is probably a Tamworth and the English sow a Yorkshire, as far as can be judged from their appearance. Towards the close of the year, the three sows produced litters—18 young pigs in all, all of which, as well as the imported animals, are doing well. It is proposed to distribute at a moderate price the young pigs among a few selected Khasias and others who are likely to take an interest in pig-breeding. Besides skim milk provided free of cost by the dairy, the pigs cost Rs. 50 for feed up to the close of the financial year.

45. *Expenditure and income of the farm.*—The following statement shows the expenditure of the farm during each of the two years under report :—

	1901-1902. Rs. a. p.	1902-1903. Rs. a. p.
Establishment	768 0 0	550 9 2
Wages of extra labour	329 4 0	519 13 8
Seeds	179 1 0	45 11 0
Appliances	12 0 0	56 15 0
Manure	230 4 9	86 5 0
Purchase of live-stock	600 0 0	2,167 11 7
Cow-sheds and pig-sty	282 0 0	485 1 6
Food for cattle and pigs	95 9 8	1,230 0 11
Silo	38 0 0	101 9 4
Miscellaneous	44 8 0	35 5 0
Total	2,578 11 5	5,279 2 2

The heavy expenditure of 1902-1903 was due to the purchase of cattle and pigs and the cost of their up-keep. The total expenditure of Rs. 7,857-13-7 during the two years was met from the following sources :

	1901-1902. Rs. a. p.	1902-1903. Rs. a. p.
Government grants	1,978 11 5	2,796 1 8
Dairy contributions	600 0 0	1,952 2 0
Sale-proceeds of milk	...	530 14 6
Total	2,578 11 5	5,279 2 2

The income of the farm during the two years amounted to Rs. 1,091-14-2, of which Rs. 846-9-10 was derived from the sale of milk, Rs. 53-11-10 from farm produce, and Rs. 191-8-6 from the sale of live stock.

The Government dairy at Shillong.

46. An account was given in the annual report for 1900-1901 of the experimental dairy established at Shillong with the object of improving the local supply of dairy produce and introducing a new industry in the province. The dairy has proved a great success, and has acquired a reputation for the excellent quality of its butter and cream cheese. Since July 1901, it has been under European management (Mrs. Fenton), subject to the supervision of the Department. The dairy takes all milk given by the herd of cows at the Government Farm, Upper Shillong. Some other milk is purchased. Besides supplying the residents of Shillong, the dairy sends out large quantities of butter and cheese all over Assam, and orders have occasionally been received from

such distant places as Madras and Burma. The working of the dairy has proved so profitable that the price of butter per pound, which was Re. 1-8 for cows and Re. 1-2 for buffalo to begin with, has been gradually reduced to Re. 1-2 and 14 annas, respectively. During the two years under report, the total value of milk amounted to Rs. 10,551-6-5, and the total net profit, after deducting all expenses and allowing for wear and tear of the machinery, to Rs. 3,951-4-5.

47. The success of the Government dairy has led to the establishment of a private concern at Shillong, which has been at work since January last. About the same time, the Government dairy was leased to Mrs. Fenton at a fixed monthly rental, but this transfer caused no practical change in the system of management. The dairy is still inspected and supervised by this Department, and the concern still belongs to Government. It would be taken over if there was mismanagement, and in any case the term of lease is only for six months, after which it will be decided what further action should be taken in the matter.

The experimental fruit garden at Shillong.

48. The fruit garden covers an area of 13·4 acres, which has been acquired at a cost of Rs. 40-10-9. Operations were commenced in the beginning of September 1902. The entire area has been enclosed, and about 1½ acres have been laid out in terraces which have been planted with fruit trees. A glass house has been built at a cost of Rs. 1,355-0-9, and a dwelling for the Superintendent of the garden. For convenience of irrigation water has been brought to the garden by means of iron pipes at a cost of Rs. 314.

49. The plan pursued at the garden is to experiment with various kinds of fruit trees grown in the temperate climates of Europe, with a view to introducing such of them as may succeed in the hill districts which possess a temperate or semi-temperate climate not unlike that of the warmer regions of Europe. The great drawback in the climate of these districts is the early setting in of the monsoon, which interferes with the ripening of many fruits, such as pear, apple, plum, peach, apricot, etc. It should be noted here that pear, apple, plum, and peach are already grown freely in and about Shillong, but the fruit in every case is of an inferior description. But by trying a number of varieties one may be found that will ripen early or give good fruit in spite of the rains. Strawberries and raspberries in the wild state grow and ripen, and experiments are being made in the fruit garden with strawberry, gooseberry, raspberry, and currants. The strawberry is already cultivated to a small extent at Shillong in private gardens. It is intended to grow a few plants of each kind in the glass house, and it will then be seen whether shelter from the rain will render successful plants that fail in the open. Grape vines are being tried in the glass house.

50. The bulk of the fruit trees planted at the garden were obtained from two English firms—Messrs. Bunyard & Co. and Thomas, Rivers & Son. Some apple, pear, and Spanish chestnuts were obtained from the Saharanpur Botanical garden, and some plants of a seedless variety of orange called the "Natal Victoria" were obtained from the Botanical garden of Durban, South Africa.

51. It is satisfactory to report that very few of the many trees and plants imported have failed. The most serious failure was that of a consignment of strawberry plants from Messrs. Thomas, Rivers & Son which arrived all but dead, and not one could be revived. A fresh batch of plants has been sent for from Europe. The apricots also have done badly; only five out of 12 grafts are living.

Besides the foregoing, small plantations have been made of strawberry, rhubarb, and cape gooseberry (*Physalis*). Five hundred strawberry plants were obtained from the Government Botanical Garden at Saharanpur, and 200 more from Messrs. Thomas, Rivers & Son. The Saharanpur plants arrived at the beginning of November, and about half of them succumbed to frost. The remaining plants survived the winter, but did not start into growth till spring. They are at present in a flourishing condition, and are expected to bear well next year. Rhubarb is altogether a novelty to these hills, and *tepari* is practically so, but both (since the close of the year of report) have proved a marked success. Arrangements have since the close of the year been made to grow asparagus and celery at the garden.

52. The permanent establishment of the garden consists of a Superintendent on Rs. 35 per mensem with free quarters and a mali on Rs. 12 per mensem.

The garden is within easy access of the Shillong station. Since its establishment, it has been visited by a large number of Khasias, who take an intelligent interest. The Superintendent himself is a Khasia.

53. The total amount granted by the Chief Commissioner for the Fruit Garden for 1902-1903 was Rs. 6,000, out of which all but Rs. 101-0-9 was spent. The main heads of expenditure were as follow :—

	Rs.	a.	p.
Acquisition of land	40	10	9
Plant shed	1,355	0	9
Malis' quarters	215	3	0
Summer house...	917	5	10
Furniture for summer house	264	13	6
Water works	315	14	0
Roads	52	10	0
Lawn	91	13	0
Reclamation and terracing	653	4	0
Fencing and manuring	565	2	3
Tools, pots, and tubs	348	14	0
Plants and seeds	821	7	0
Establishment	174	2	8
Cultivation	62	6	0
Contingencies	20	4	6
Total	5,898	15	3

54. *Cotton.*—A small quantity of seed of two varieties of American and of two varieties of Egyptian cotton was obtained last year for Babu Syama Charan Maitra, of Tezpur. The seed arrived in June and was sown rather late in the season. The plants did not thrive, and the experiment was thus a failure. Some experiments are now in progress in the Garo Hills in the cultivation of two varieties of improved cotton obtained from the Cawnpore Experimental Farm. The seed was distributed through the Deputy Commissioner. The result will be noticed in the next annual report.

Seed distribution.

55. *Rice.*—The seed of an improved variety of rice (Bansmati) from the Burdwan Experimental Farm has been supplied to two private individuals for experimental cultivation. The crop will be cultivated during the current year, and the result will be noticed in the next annual report.

56. *Jute.*—At the instance of the mauzadar of Silakuti in the sadr subdivision of Sibsagar, one maund of jute seed was obtained from Serajganj and supplied to him towards the end of last year for distribution among selected cultivators in the mauza. The crop is now on the ground and promises to give a good outturn. This attempt by an Assamese to introduce a new crop into Sibsagar shows a healthy spirit of enterprize.

57. *Tobacco and Sugarcane.*—Babu Debeswar Gossain, of the Barpathar Farm, Golaghat, was supplied last year with 4 pounds of Rangpur tobacco seed. With this he planted 4 acres of land. The crop was affected by want of rain during the cold weather and by a severe hailstorm when it was nearly ripe. The yield of leaf was consequently not as good as was expected. It amounted to about 33¼ maunds, and fetched a sum of Rs. 161-12-0, giving a net profit of Rs. 34-10-3. The result was encouraging, and the experiment will be repeated this year.

The same gentleman has been cultivating sugarcane for several years on a fairly extensive scale. In 1899, he was supplied by this Department with some cuttings of two well-known Bengali varieties of sugarcane—*Samsara* and *Khari*. He has been growing these for some years past, and considers the result satisfactory.

58. *Cheena millet.*—Eight pounds of the seed of the Cheena millet (*Panicum millaceum*) was supplied towards the close of last year to the Deputy Commissioner of Nowgong for experimental cultivation. This millet grows and ripens in the hot weather. It comes to maturity earlier than *ahu* rice. In the *chapari* lands of the Brahmaputra Valley, the *ahu* crop is often destroyed by early floods. It is thought that Cheena millet might take the place of the *ahu* crop so extensively grown in Assam on the *chaparis* of the Brahmaputra and ripen before the floods. The seed was sown at a few selected places in March last. The result of the trial has not been reported at the time of writing.

59. *Potato.*—Captain Howell has been trying to introduce the cultivation of potatoes in the Naga Hills. He was supplied with 16 maunds of seed potatoes from the Experimental Farm at Upper Shillong in January 1903. Of this, 2 maunds were sown in the jail garden, one maund in a private garden of Captain Howell's, and the rest were distributed among the Nagas of 5 villages. The best outturn was obtained with the Magnum Bonum variety in the jail garden, where it reached

10 times the quantity of seed sown, which was good considering the adverse circumstances of the season, and equals the average of the yield in the Shillong Farm. As in the Khasi Hills, the crop was attacked with blight due to heavy rain in May. Bordeaux mixture was used and the blight was cured, but again red ants attacked tubers, and so affected them that the Deputy Commissioner says "the bulk of the crop is only fit to be given to the pigs." The outturn reaped by the Nagas is not known, but in some cases large, well-shaped and quite sound potatoes were obtained. The Magnum Bonum appears best adapted to the Naga Hills, and the Deputy Commissioner proposes to repeat the experiment next year.

The Superintendent of the Tezpur Lunatic Asylum was supplied in October 1901 with 4 maunds of Nainital potatoes grown at Shillong, and in October 1902 with 6 maunds of Magnum Bonum potatoes from the Farm for experimental cultivation. The outturn obtained by him was seven times the seed used on each occasion. The size and quality of potatoes were reported to be exceptionally good.

The managers of the Kathalgoorie garden in Darrang and the Naharjan garden in Sibsagar were supplied, in 1902, with 1 and 2 maunds, respectively, of seed potatoes for experimental cultivation from the Farm stock. The result obtained by the former was good, the outturn from the 1 maund of seed being 11 maunds 27 seers. No report has been received from the latter.

Improvement of tobacco.

60. It was noticed in the last departmental report that Mr. Mati Lal Haldar, a Bengali tea-planter, had experimented with four kinds of Exotic tobacco, *viz.*, Manilla, Landreths, White Burleigh, and Yellow Orinoko, the seed of which was supplied to him by Government. The experiment was made in two successive years 1900-1901 and 1901-1902. Samples of the crop of 1900-1901 were sent through the Reporter on Economic Products to the Imperial Institute for valuation, but the specimens arrived in a state that rendered valuation impossible, through having been packed in the Reporter's office with napthaline. Samples of the same crop were submitted, at the same time, to an European tobacco expert attached to the Great Eastern Hotel in Calcutta. He considered the tobacco to be of good quality, but to have been injured by defective curing. Mr. Haldar took greater care in curing the crop of the following year, and samples of it were submitted for valuation to Messrs. Spencer & Co. of Dindigul, Madras. Messrs. Spencer & Co.'s report is extremely favourable. Of two samples sent, one has been valued by them at Re. 1 and the other at annas 12 per lb. The texture, colour, and burning quality of the samples were considered to be excellent, though they were wanting somewhat in aroma.

CHAPTER VI.

MISCELLANEOUS.

Collections of economic products.

61. At the instance of the Reporter on Economic Products, botanical and economic specimens of ten plants were procured and sent to Calcutta during the two years ending on 31st March 1903, for the index collections of the Imperial Institute and Indian Museum. Products from eight more plants were also supplied for commercial collections. Seven plants which are said to possess medicinal properties, and which are used in the Khasi and Jaintia Hills, have been scientifically identified by the Reporter. Botanical specimens of 10 varieties of plantains have also been forwarded in connection with Mr. Basu's note on "The cultivation of plantain in the Assam Valley," for the purpose of having their respective racial and varietal differences determined.

Supply of seed and other products to correspondents.

62. Apart from the supply of economic products to the Reporter, numerous requisitions for seed and other products, from both official and non-official correspondents, were met during the two years under report. The list of articles supplied included seed of rice, tea, coffee, cotton, cardamom, *tezpat, Terminalia arjuna and Wedlandia tinctoria;* also Cryptomeria plants, ornamental bamboo roots and Shella oranges.

Bulletins issued.

63. A monograph on wood carving in Assam, by Mr. Abdul Majid, was published during the period under report. Three bulletins were brought out, *viz.* :—

No. 7—On the cultivation of plantain in the Assam Valley,
No. 8—A list of the cultivated plants in Assam, and
No. 9—On pulses in the Assam Valley.

These three works were compiled by Mr. Basu. No. 8—the list of cultivated plants—is a revised edition of a previous bulletin. Being a work of particular utility, it was deemed desirable to republish it with corrections and additions, such as an index, etc.

Enquiry about manures.

64. A request was received from the Agricultural Chemist to the Government of India to be furnished with samples of all the nitrogen yielding manures used in Assam. It was proposed to estimate the amount of nitrogen in each sample in order to determine the quantity necessary to be applied to the land per acre. A large number of samples of manures was accordingly sent to the Agricultural Chemist. An enquiry was made to ascertain the kinds of manures used in each district. Reports received show that, while cowdung is chiefly used, other manures are occasionally put on the soil. Among these the most important is oilcake which is coming into favour on tea gardens and is also used for sugarcane and betel-leaf in the Surma Valley.

Improvement of cotton.

65. In connection with the experiments now being carried on by the Inspector General of Agriculture for the improvement of cotton by cross-fertilization, the seed of nine representative varieties of cotton grown in Assam were supplied to him in the spring of 1902. Of these, five samples were sent unginned. These, together with 43 other samples received by the Inspector General of Agriculture, from other parts of India were hand-ginned in his office; the proportion of lint to seed was noted, and the quality of the lint was ascertained by reference to professional experts. The results are given in a note on the improvement of Indian cotton published by the Inspector General of Agriculture. It would appear that the Assam samples head the list of Indian cottons in the percentage of lint to seed which, in one variety (Bhung of Sylhet) reached as high as 58·3, and in none was lower than 40·8, while in other Indian varieties it varied from 20·6 to 43 per cent. In the Egyptian and American varieties, the percentage appears to vary from 25 to 37·5 per cent. On the other hand, while the Assam varieties excelled every other in point of the proportion of lint to seed, they occupied the very lowest place as regards the quality of the lint. The best is suitable for spinning counts up to 20, one is fit only for 8, another for 10: one is fit only for dyeing and another (Garo Hills cotton) is reported to be good for mixing with wool. The price of Assam cotton is consequently low, being about one-half to two-thirds the price of the Egyptian cotton used by the Indian mills.

Mustard.

66. Steps were taken to supply the Inspector General of Agriculture in India with a 5 lb. sample of each variety of mustard grown in the province.

Improved cotton gin.

67. I may notice here a useful and interesting invention which has aroused considerable interest in the Garo Hills. It is a roller cotton gin worked by a treadle, and has been devised by a Garo carpenter under the superintendence of the Revd. Mr. Mason, Head Master of the Training School at Tura. It is said to give a much larger outturn than the small hand gins that are in general use. Mr. Mason has established a ginning-shed in which he employs a number of his school boys upon these new machines with the laudable object of making them earn stipends for themselves instead of depending, as they would otherwise do, on eleemosynary scholarships. Some boys are said to have earned as much as Rs. 8 each a month in this way. The Hon'ble the Chief Commissioner inspected these machines during his last cold-weather tour and was pleased to sanction a grant of Rs. 500 to assist Mr. Mason in extending the use of the gin among school boys and in the district generally.

Breeding bulls.

68. In 1901-1902, there were four Government breeding bulls in the province, *viz.*, at Haflong, Sylhet (Jaintia), Naharjan tea estate in Sibsagar, and Shillong. The bull in Jaintia proved too heavy for the cows there and was removed in July 1902 to Silchar. In 1902-1903 a Patna bull was procured through the Superintendent, Civil Veterinary Department, Bengal. The animal was at first placed in the custody of Mr. M. L. Haldar, of the Monai tea estate, Darrang, and was subsequently transferred to the care of Mr. A. J. Brown, Manager of the Gelahating tea estate in the same district. A Patna bull was also purchased along with the cows obtained for the Government Farm at Upper Shillong. The number of successful coverings is uncertain, as the bulls at Naharjan, Haflong, and Shillong were allowed to roam freely among the herds of cattle grazing in the fields. According to the information available, the Kosi bull of Shillong served 27 cows successfully, but it has become too large and bulky for Khasi cows. Its progeny shows marked improvement over the Khasi breed, but their number is as yet very small. The Patna bull recently placed in charge of Mr. Brown made 17 coverings. Mr. Forbes of Naharjan observes that the villagers, particularly the Bengali settlers, recognise the value of getting their cows covered by the Government bull, and that the breed of cattle round his garden has, in his opinion, greatly improved since the importation of this bull. The cost incurred for the feed and keep of the bulls (including the price and freight of the Patna bull stationed at Gelahating) was Rs. 1,798-13-8.

Cattle-disease.

69. The statement in Appendix D shows the number of deaths among cattle reported from the several districts of the province during the past two years and the causes to which they are attributed. The statistics cannot of course pretend to be complete or accurate, but may be useful for comparing one year with another. The total number of deaths reported was 166,877. As compared with 1900-1901, there was a relative decrease in mortality during the two years under report in every district, except Nowgong, Sibsagar, and Khasi and Jaintia Hills and the Garo Hills. There was, generally speaking, no unusually serious cattle-disease in any district, except Nowgong and Sibsagar. In the Boko tahsil of Kamrup a large number of cattle died from cattle plague, and there was an outbreak of anthrax attended with serious consequences in the Balijan tea estate of Lakhimpur. In both these districts the increased mortality of 1901-1902 was more than counterbalanced by low death figures in 1902-1903. Rinderpest broke out in various parts of Sibsagar; but none of the outbreaks assumed a serious type. A serious outbreak of rinderpest in two gardens in Golaghat was checked by recourse to prompt measures of preventive inoculation by the Veterinary Surgeon employed by the Sibsagar Local Boards.

At Shillong, there was a severe outbreak of rinderpest during July, August, and September 1902, and the opportunity was taken for trying the new method of serum inoculation as a preventive against this disease. The services of the Veterinary Assistant employed by the Sibsagar Local Boards were procured for the purpose. Two hundred and eighty-five head of cattle were inoculated by him with the protective serum. The single serum method was adopted. A few deaths among the inoculated cattle took place, probably owing to the victims having contracted the disease prior to inoculation. By detailed enquiry into the results of the inoculation, it was found that, while the statistics were not quite convincing, the owners of inoculated cattle were favourably disposed towards this new method of preventive treatment. The total cost incurred in combating the outbreak at Shillong was Rs. 334-2-9, of which Rs. 150 was paid by the Deputy Commissioner, Khasi and Jaintia Hills, and the balance by this department.

The Veterinary Assistant employed by the Sibsagar Local Boards, Mr. B. Basu, joined his appointment on the 17th October 1901, and the Chairman of the Sibsagar Local Boards reports that he has rendered very valuable services in treating and inoculating cattle. Up to the 31st March 1903, he inoculated 1,984 and treated 1,129 head of cattle, excluding the work done at Shillong. There were only 8 deaths among the cattle under his treatment.

CHAPTER VII.

FINANCIAL.

Expenditure.

70. The expenditure incurred by the department during the two years ending the 31st March 1903 was Rs. 5,18,463-13-8, as detailed below :—

	Rs.	a.	p.
Superintendence, including rain-gauge charges, veterinary charges, experimental cultivation, and cost of economic collection	99,137	1	4
Settlement	46,212	6	10
Survey Detachment (exclusive of Rs. 33,197-14-4 debitable to Imperial)	29,551	3	4
Survey schools	4,030	1	0
Kanungo establishment	3,29,397	14	7
Registration of trade	10,135	2	7
Total	5,18,463	13	8

Compared with 1900-1901 there has been an increase of nearly Rs. 6,000 in the annual expenditure, taking the average of the two years. The increase occurred wholly during the year 1902-1903, and is due mainly to (1) extra expenditure on farm and fruit garden at Shillong, and (2) survey and settlement operations in the Kamrup and Sibsagar districts. But for the latter there would have been a large decrease in the total expenditure. There was some increase under the head veterinary charges owing to the purchase of a fresh breeding bull for the province and the deputation of a Veterinary Assistant Surgeon to inoculate cattle in and near Shillong against rinderpest. Under the head Kanungo establishment there has been a small increase, which is accounted for mainly by the appointment of two new supervisor kanungos and promotion to the higher grades of mandals and patwaris.

Shillong,
The 22nd August 1903.

F. C. HENNIKER,
Director, Department of Land Records and Agriculture, Assam.

APPENDIX A.

Sketch sheet showing the area of each Supervisor Kanungo's Circle in cadastrally-surveyed portion of the Province.

Subdivision.	Name of Kanungo's circle.	Jhil-cleared.	Cultivated.	Permanently-Settled.	Khas-Mahal.	Khas-Unsettled.	Gantha.	Total.	Number of mauzahs according to Census of 1901.
1	2	3	4	5	6	7	8	9	10
		Sq. M.	Sq. M.	Sq. M.	Sq. M.	Sq. M.	Sq. M.	Sq. M.	
Hailakandi	Hailakandi ...	...	67·2	...	83·90	7·08	22·18	180	15
	Sonaspur ...	...	...	...	76·49	14·16	54·38	145·03	14
	Total Hailakandi ...	...	67·2	...	160·43	21·24	87·16	329·03	29
Sylhet	Chatlakhar ...	...	...	...	62·37	26·93	53·67	144·97	10
	Kalignon ...	...	8·34	...	109·13	33·93	1·31	144·91	16
	Barakpur ...	...	6·08	...	49·27	10·38	20·57	86·28	8
	Ukharband ...	...	1·03	...	95·13	19·33	36·79	152·45	12
	Lakhipur ...	...	...	...	84·75	14·6	34·87	134·22	11
	Sonapur ...	...	...	...	30·36	10·41	13·11	113·88	11
	Total Silchar ...	...	7·45	...	430·21	108·76	161·03	760·36	68
	,, Cachar ...	...	3·18	...	651·98	139·19	248·98	1,033·33	99
Karimganj	Pratabganj ...	...	...	...	30·40	18·74	59·85	119·08	4
North Sylhet (Jaintia)	Karanghat ...	...	1·17	1·87	98·13	20·87	6·80	128·96	15
	Jaintiapur ...	0·13	0·06	0·08	63·62	40·11	0·06	104·55	9
	Haripur ...	...	9·14	0·98	78·04	53·49	8·64	149·49	13
	Gowainghat ...	...	0·43	0·13	35·78	49·80	2·98	108·46	11
	Total Jaintia ...	0·13	11·20	3·06	303·59	163·01	18·48	484·16	46
	Total Sylhet ...	0·13	11·20	3·06	324·08	192·35	37·34	603·54	50
Dhubri	Bijni and Sidli 2 circles (Sidli 2 circles and Gowal)	...	...	...	79·04	594·67	1·66	535·73[a]	28
Barpeta	Bajali ...	22·66	0·71	...	60·38	75·54	...	161·13	24
	Barpeta ...	0·06	0·37	...	13·60	126·40	...	140·83	15
	Roha ...	82·00	0·20	...	37·78	202·91	...	262·91	23
	Total Barpeta...	52·66	1·08	...	111·75	404·85	...	571·86	62
Gauhati	Beltola ...	3·16	0·38	...	31·48	50·23	1·81	87·18	13
	Palasbari ...	8·81	1·98	...	59·32	47·67	...	117·18	22
	Boko ...	0·31	0·88	...	20·89	91·35	...	113·05	17
	Chhaigaon ...	2·66	1·36	...	38·68	79·69	1·53	121·96	20
	Hajo ...	37·21	13·63	...	30·08	53·15	1·56	136·23	21
	Barkhetri ...	3·41	0·40	...	19·83	50·31	...	73·74	17
	Rangiya ...	47·35	4·63	...	77·08	70·35	0·07	199·50	36
	Nalbari ...	23·45	1·45	...	66·10	26·13	0·73	117·94	19
	Tamulpur ...	4·13	0·45	...	34·80	130·43	0·68	170·53	18
	Baroma ...	14·96	3·38	...	46·32	65·70	...	140·04	18
	Palidarrang ...	20·19	10·79	...	53·10	41·20	0·80	145·68	30
	Total Gauhati ...	175·90	44·40	...	479·84	720·35	7·18	1,428·05	211
	Total Kamrup ...	228·56	46·08	...	596·31	1,098·03	7·18	1,906·58	273
Mangaldai	Mangaldai ...	3·47	7·79	...	30·43	92·17	3·33	135·90	23
	Kalaigaon ...	21·05	3·04	...	70·42	129·91	13·62	247·54	34
	Patharughat ...	4·44	0·61	...	30·46	81·54	0·32	117·57	20
	Bengbari ...	...	0·09	...	47·80	129·16	8·35	185·40	16
	Total Mangaldai ...	29·06	4·44	...	214·41	436·78	26·82	726·71	83
Tezpur	Eastern circle ...	8·34	1·23	...	41·97	60·17	2·47	107·13	14
	Western ,, ...	2·27	0·27	...	63·06	37·37	0·46	140·43	20
	Total Tezpur ...	3·61	1·50	...	105·03	137·54	2·88	253·56	34
	Total Darrang ...	44·27	5·64	...	323·44	573·90	29·70	980·27	117
Nowgong	Silghat ...	3·16	3·35	...	60·72	31·23	10·39	138·88	22
	Towa ...	1·23	0·76	...	73·37	104·35	1·47	181·68	32
	Dubokia ...	0·12	1·25	...	31·63	79·10	10·95	122·85	18
	Roha ...	0·03	0·02	...	37·87	110·85	1·55	150·32	32
	Dhing ...	3·26	0·84	...	30·19	134·98	0·40	168·85	15
	Geroa ...	...	...	...	22·28	106·37	...	128·65	17
	Gheyan ...	0·13	0·19	...	34·66	80·73	...	115·70	21
	Mayang ...	...	...	...	9·88	83·96	0·83	94·67	11
	Total Nowgong ...	8·40	3·61	...	299·80	723·29	25·59	1,110·60	168
Golaghat	Northern circle ...	0·60	0·41	...	95·56	71·88	21·64	190·18	26
	Southern ,, ...	0·20	1·37	...	94·89	47·47	20·23	164·16	21
	Total Golaghat ...	0·80	1·78	...	190·45	119·35	41·87	354·34	47
Jorhat	Eastern circle...	0·25	0·23	...	86·71	57·48	33·01	167·68	19
	North-Western circle ...	0·03	3·00	...	100·68	52·22	36·04	200·87	23
	South-Western ,, ...	1·16	5·46	...	73·85	58·16	43·12	163·65	17
	Majuli ...	0·03	34·92	...	21·22	93·53	0·08	150·36	19
	Total Jorhat ...	1·27	43·61	...	286·26	261·39	112·85	682·56	78
Sibsagar sadr ...	Eastern circle...	0·23	1·91	...	80·65	168·44	30·98	282·23	26
	Central ,, ...	2·11	6·47	...	73·96	101·51	22·51	190·35	21
	Western ,, ...	0·47	0·23	...	100·38	81·56	40·09	222·93	24
	Total Sibsagar sadr ...	2·81	8·61	...	254·99	351·11	91·60	694·54	71
	Total Sibsagar ...	6·47	58·00	...	731·70	731·85	246·32	1,772·74	196
North Lakhimpur	North Lakhimpur ...	0·37	3·69	...	84·76	23·58	0·51	113·03	20
Dibrugarh	Dibrugarh circle ...	0·84	...	...	55·20	21·86	31·83	108·53	15
	Chabua ,, ...	0·27	0·10	...	56·64	48·55	11·53	117·09	14
	Tinsukia ,, ...	0·07	0·10	...	14·97	17·17	0·43	32·79	6
	Total Dibrugarh ...	1·18	0·20	...	126·76	88·30	43·79	258·03	35
	Total Lakhimpur ...	1·05	3·89	...	171·54	129·78	43·79	343·86	55

APPENDIX B.

Statement showing the condition of Survey marks on the 30th June 1902.

Number.	Classification.	Total number of marks.	Total number found in good order.	Number found not in good order.		Total (of columns 4 and 5) in good order on 1st July 1902.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
1	Trijunction prisms ...	14,630	12,922	313	226	13,235	1,169
2	Traverse station shown by mounds and boughs ...	71,788	34,312	21,147	9,073	55,459	7,256
3	Kanungos' mounds including jungle mounds ...	9,696	4,578	2,436	1,556	7,014	1,126
4	Country stones on theodolite stations	25,023	19,676	140	230	19,816	4,977
5	Prisms on boundaries of grants	7,553	6,972	122	246	7,094	213
6	Concrete blocks on boundaries of grants. ...	16,153	14,656	330	681	14,986	486
7	Country stones on boundaries of grants ...	26,217	19,906	251	375	20,157	5,685
8	Mounds on ditto ...	4,113	2,191	199	1,306	2,390	417
9	Brick pillars ditto ...	675	420	...	2	420	253
10	Iron posts	2	2	...	...	2	...
11	Brick pillars on town boundaries	21	21	...	...	21	...
	Total	175,871	115,656	24,988	13,695	140,594	21,582

APPENDIX C.

Current Progress Return of Resettlement for 1902-1903.

District.	Number of villages.				Office work (for villages dealt with in field during year preceding).			Field work during year under report.			Assessment.			Expenditure.		Incidence of expenditure per square mile of area.		
	Total in the district.		Taken up to the end of the year under report.		Number of villages to be dealt with in office.	Number of villages for which		Number of villages for which			Number of villages for which rates have been submitted.							
	Established.	Fluctuating.	Established.	Fluctuating.		Map faired.	Records faired.	Maps and records corrected.	Land classed.	Maps and records attested.	During the year.	Previously.	Total to end of year.	During year.	Total to end of year.	For which maps and records corrected.	Attested.	For which revenue rates submitted.
1	2	3.	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
														Rs.	Rs.	Rs.		
Kamrup* ...	1,555(a)	607(a)	1,343	68	...	...	...	1,373	115	39	...	...	...	13,762(b)	13,762( )	8·75	...	...
Sibsagar ...	1,405	212	736	55	...	...	...	633(c)	61	...	...	...	...	14,700(d)	14,700	31·39	...	...

* In case of Kamrup all work done up to the 31st May 1903 has been included.

(a) The division between established and fluctuating is a rough one in Kamrup.

(b) Up to 31st March 1903 Rs. 9,935 and during April and May 1903 Rs. 3,827.

(c) Both maps and *dagchithas* in 414 and maps only in the remaining 219 villages.

(d) Amount cashed up to 31st March 1903.

APPENDIX D.

Statement showing the number of deaths among cattle during 1900-1901 *and* 1901-1903.

District.	Rinderpest.		Foot-and-mouth disease.		Anthrax.		Other diseases.		Total.		Estimated value of cattle.	
	1900-1901.	1901-1903.	1900-1901.	1901-1903.	1900-1901.	1901-1903.	1900-1901.	1901-1903.	1900-1901.	1901-1903.	1900-1901.	1901-1903.
1	2		3		4		5		6		7	
											Rs.	Rs.
Cachar ...	412	869	137	61	197	769	174	176	920	1,875	13,898	32,609
Sylhet ...	6,507	7,944	3,268	4,165	4,155	6,092	9,946	14,846	23,876	33,047	2,08,581	2,47,492
Goalpara ...	1,393	2,035	2,110	4,000	1,495	2,046	3,762	6,545	8,760	14,626	55,587	1,06,538
Kamrup ...	4,344	13,320	4,427	6,123	10,134	5,226	5,840	12,763	24,745	37,432	1,84,481	2,80,740
Darrang	4,416	6,645	1,446	2,097	505	1,315	3,509	4,742	9,876	14,799	75,541	1,30,991
Nowgong ...	3,058	5,162	1,420	4,526	650	1,646	1,362	3,306	6,490	14,640	51,920	1,17,120
Sibsagar ...	7,796	12,703	1,334	2,998	902	3,180	5,293	14,697	15,325	33,578	1,74,764	3,43,350
Lakhimpur ...	4,691	7,272	311	337	245	112	1,575	4,651	6,822	12,372	68,220	1,59,093
Naga Hills ...	...	...	...	...	...	...	...	...	...	...	...	...
Khasi and Jaintia Hills.	...	541	40	...	...	...	52	140	125	681	2,000	6,810
Garo Hills ...	...	1,651	131	321	...	506	87	1,349	218	3,827	2,073	33,712
Total ...	32,617	58,142	14,624	24,628	18,283	20,892	31,600	63,215	97,157	166,877	8,37,075	14,58,455

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REPORT

OF THE

DEPARTMENT OF

LAND RECORDS AND AGRICULTURE

ASSAM

FOR THE

Fifteen Months ending the 30th June 1904.

BY

F. C. HENNIKER, I.C.S.,

DIRECTOR OF THE DEPARTMENT.

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FROM

F. C. HENNIKER, Esq., I.C.S.,
DIRECTOR, DEPARTMENT OF LAND RECORDS AND AGRICULTURE,
ASSAM.

TO,

THE SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

Shillong, the 7th September 1904.

SIR,

I HAVE the honour to submit the Report on the Operations of this Department for the fifteen months ending the 30th June 1904. The delay in its submission is due to the fact that there has again been a change in the period for which the report had to be drawn up,—*i.e.*, this year it was ordered that the annual report should be for the year ending the 30th June. None of the districts gave the requisite information in time, notwithstanding the issue of several reminders. In some cases incomplete reports and statements were furnished and supplementary information had to be called for. This was not received complete till the 30th August 1904.

I have the honour to be,

SIR,

Your most obedient Servant,

F. C. HENNIKER,

Director, Department of Land Records and Agriculture, Assam.

[Prescribed maximum length—30 pages.]

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REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR THE

Fifteen Months ending the 30th June 1904.

CHAPTER I.

INTRODUCTION.

The report.

THE present report deals with a period of fifteen months from the 1st April 1903 to the 30th June 1904. Under instructions conveyed in Secretary's letter of the 16th January 1904 (No. 1224Rev. —245R., the year for the report is to coincide with that for the Land Revenue Report, which has been made to end on the 30th June instead of the 31st March.

Charge.

2. I was in charge of the Department for the whole period under review. Rai B. C. Basu Bahadur, B.A., M.R.A.C., M.R.A S. (Eng.), was Assistant to the Director throughout the period.

Mr. T. Shaw was the Superintendent of Provincial Surveys and Mr. C. A. O'Donel continued as the junior officer of the Survey detachment (Sub-Assistant Superintendent). The Survey of India Department deputed Mr. McRae, Extra Assistant Superintendent of Survey, to supervise the work of the Drawing Office. He was directly under the orders of the Surveyor General.

Tours of the Director.

I was on tour for 184 days, inclusive of 41 days spent in connection with my deputation to Kashmir to study the silk industry as practised in that State. This tour was in June-July 1903. On return I visited Bhairab Bazar (traffic registration station), and from there went to see the settlement work in progress in Gauhati and Jorhat, returning to Shillong at the end of July. The cold weather tour commenced in November in the Kamrup district, where I accompanied the Hon'ble the Chief Commissioner and the Hon'ble Sir D. Ibbetson to visit the Settlement Officers at their work, *viz.*, first the Settlement Officer of Kamrup at Tapabari, later the Settlement Officer of Sibsagar at Jorhat. From Jorhat I went to North Lakhimpur, and thence *viâ* Bardoloni and Dhakuakhana to Dibrugarh. After Dibrugarh I devoted some days to the Land Records staff at Tinsukia and Jaipur. From the latter place I returned to Gauhati and then went *viâ* Shillong and Cherrapunji (January 1904), over to the Surma Valley, proceeding *viâ* Sylhet and Karimganj to the Langai-Singla disforested areas. A report on the progress of colonising those areas was submitted to the Chief Commissioner. From the Langai and Singla Valleys I marched to Hailakandi (inspecting the Dhaleswari disforested area). Thence I proceeded to Badarpur and by rail through the North Cachar Hills. From Lumding I was compelled, at great inconvenience, to make a flying visit to Moriani to see what arrangements were being made for the rinderpest inoculation experiments. Then I returned to the Kamrup district, inspected the survey school, oil-mill, etc., etc., at Gauhati, and subsequently toured with the Settlement Officer in North Kamrup and Barpeta, observing the field work being done by his staff and enquiring about gold and silver ware. I returned to Shillong on 15th March.

Tours of the Assistant to the Director.

4. During the fifteen months under report, the Rai Bahadur was on tour for 159 days, exclusive of his visits to the Experimental Farm at Upper Shillong. Out of the total period on tour, fifty-three days were covered by his deputation to Ceylon and Southern India for the purpose of investigating certain tropical products, and fifty-one days were spent by him in an enquiry into the agricultural capabilities of the Nambor forests. Mr. Basu was on tour for 43 days inspecting the Tropical Plantation at Wahjain, and he spent 12 days in April 1903 in investigating the subject of protective embankments in the Sibsagar district.

Tours of the Superintendent of Provincial Surveys and the Sub-Assistant Superintendent of Surveys.

5. Mr. T. Shaw, Superintendent of Provincial Surveys, spent 253 days on tour and tested in the field the maps and records of 54 mandals in 202 villages in the districts of Goalpara, Nowgong, and Lakhimpur. He conducted three survey school examinations for first-class certificates, one at Gauhati, one at Jorhat, and one at Dibrugarh, and inspected the Gauhati Survey School. A survey class for training of officers was held by him in February 1904. One Assistant Commissioner, three Extra Assistant Commissioners, and four Sub-Deputy Collectors passed through it. Mr. Shaw also examined at Sylhet two pleaders to test their knowledge in surveying. Both of them passed. There he further tested the survey qualifications of 10 patwaris and 14 candidates, with a view to granting survey certificates to them. The above is in addition to his ordinary inspection and control of his survey subordinates and the Drawing Office. He twice visited Jorhat to advise the Settlement Officer in connection with the tracing of cadastral maps. Mr. C. A. O'Donel, Sub-Assistant Superintendent, was employed throughout the field season on the survey and demarcation of boundaries in both the valleys, and was not available for supervision of traverse surveys.

CHAPTER II.

LAND RECORDS.

Mandals and patwaris.

6. The sanctioned strength of mandals and patwaris was 1,112 on the 30th June 1904, against 1,151 in the preceding year. The alteration in number was due to (1) replacement under the orders of the Hon'ble the Chief Commissioner of the patwaris' staff (34) sanctioned for the *ilam*, etc., estates for Sylhet by 10 amins, (2) the revision of the patwari establishment for the Jaintia parganas, resulting in a reduction of 6 men, and (3) the sanction of an additional mandal for Lakhimpur. The sanctioned numbers in each grade are :—first grade 220 ; second grade, 673, and third grade 219. The number actually entertained on the 30th June 1904 was 1,105, *viz.*, 202 in the first grade, 546 in the second grade, and 357 in the third grade. The number entertained in the first grade was 33 more than in the preceding year. The number of uncertificated mandals and patwaris has further been reduced. There are only 51 without certificates, against 58 on the 31st March 1903. Of these, 30 are exempted from passing in surveying and 5 are only temporary men in the Jaintia parganas officiating in place of permanent patwaris qualified in surveying. The number unqualified is 4 in Cachar, 1 (a Mech) in Goalpara, 1 in Kamrup, 2 each in Darrang, Nowgong, and Sibsagar, and 4 in Lakhimpur. Of the 10 amins sanctioned and entertained for *ilam*, etc., estates, 5 are on Rs. 12 each and 5 on Rs. 10 each per mensem. They are all qualified.

The average area of a mandal's circle in the Assam Valley is 17,779 *bighas* and of a patwari's circle in Jaintia and Cachar 20,366 and 20,790 *bighas* respectively. The staff sanctioned for Karimganj subdivision consists of 10 patwaris, but the average area of each man's circle is at present indefinite. When the settlement of the Langai-Singla disforested area has been completed, a proper distribution of the patwaris' circles will be made. The statement in Appendix A shows the number of mandals or patwaris in each subdivision, and the number in charge of the circles where their homes are. The statement is newly prescribed in connection with the recent orders to localise mandals as far as possible. District Officers have not in all cases given the needed information, and of the mandals shown as having homes outside their circles, there are many living so close to the circle that their case does not amount to a contravention of rule. The rules on this subject have not yet been finally determined, but all Deputy Commissioners are now aware that it is an object that each circle should be in charge of a resident mandal. Some transfers have taken place. In new appointments the rule is observed. One way and another it is satisfactory to note that this year there are 62 more resident mandals than there were last year. An endeavour is being made to enlist and train local candidates for employment as mandals in circles where there is no one qualified, and for this end gratuitous training at the survey schools is being freely given. It is in contemplation to grant to the mandal or patwari a qualified hereditary claim to the appointment. One condition of such hereditary right will be residence, and this will be a further useful aid to securing local men.

The rules for the distribution of mandals' and patwaris' salary worked fairly during the period. Pay for May 1904 was drawn in most of the districts before the end of June 1904. Difficulties still exist, and some modification of the rules is under consideration.

A system of rewards to mandals and patwaris for exceptionally good work in the field has been introduced with effect from the 1st April 1903. The working of the system in Assam has so far been good.

Survey schools.

7. There was no change in the number of Survey schools and their locality during the period under review. The following statement gives in detail the number of pupils passed from each of the three schools and the average cost per pupil side by side with the figures for 1901-1903 :—

Year.	Number of pupils who received first class certificates.				Number of pupils who received second class certificates.				Total passed.	Total cost of the school.	Total receipt.	Net cost.	Average net cost of each passed pupil.
	Mauzadars.	Mandals.	Candidates.	Total.	Mauzadars.	Mandals.	Candidates.	Total.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14
										Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1901-1903... Gauhati ...	...	1	17	18	1	14	101	116	134	1,995 15 0	1,490 0 0	505 15 0	3 12 5
1901-1903... Jorhat ...	...	8	7	15	...	...	16	16	31	928 6 0	597 13 0	330 9 0	10 10 7
1901-1903... Dibrugarh	...	...	...	...	...	2	14	16	16	1,105 12 0	476 0 0	629 12 0	39 5 9
Total for 1901-1903 ...	...	9	24	33	1	16	131	148	181	4,038 1 0	2,563 13 0	1,466 4 0	8 1 7
Fifteen months ending 30th June 1904. Gauhati ...	...	...	...	...	...	1	85	86	86	1,062 6 3	1,013 8 0	48 14 3	0 8 11
Fifteen months ending 30th June 1904. Jorhat ...	...	...	...	...	1	...	29	30	30	519 10 2	465 8 0	54 2 2	1 12 10
Fifteen months ending 30th June 1904. Dibrugarh	...	1	3	4	...	1	13	14	18	675 14 0	309 8 0	366 6 0	20 5 8
Total for 15 months ending 30th June 1904.	...	1	3	4	1	2	127	130	134	2,257 14 5	1,788 8 0	469 6 5	3 8 0

The results are on the whole fair. The total number of pupils passed was 134, against 181 in the preceding two years, and the average cost to Government per pupil decreased from Rs. 8-1-7 to Rs. 3-8. The Gauhati Survey school has continued to show satisfactory results, and the average cost per pupil was very small, Rs. 0-8-11 (the smallest during the last ten years). The school is fortunate in having a capable master, and is popular. There has been an improvement in the number of pupils, and if this state of things continue it may be expected that the school will become self-supporting in the near future. The Jorhat Survey school has also made satisfactory progress under its new master. The number of pupils passed was 30, though only three examinations were held. There was no master for two terms, yet the average cost has decreased from Rs. 10-10-7 to Rs. 1-12-10. At Dibrugarh the master is of indifferent abilities and the education with which the students come to the school is generally poor. Still results were better than in the preceding two years. The master will be transferred shortly, and a more competent man appointed. Every Survey school ought to have a hostel like the one at Gauhati, but action for the present is deferred as it is under consideration whether Survey schools might not be abolished and recruits for the post of mandal taught by the kanungo, who might get a reward for doing so. For the present the schools are being maintained, but the proposal to start a new one in the Surma Valley has been abandoned. I inspected all the three schools on various occasions.

Three examinations for first-class survey certificates (one at each of the centres) were held during the period. Some alterations were made in the rule for the grant of free studentships with a view to exclude undeserving pupils from its benefit and to give more facility to pupils from backward localities to qualify for the post of mandal.

Supervisor kanungo's touring and inspection.

8. The sanctioned scale of supervisor kanungos on the 30th June 1904 was 42 in the first grade and 22 in the second, against 39 and 21, respectively, on the 31st March 1903. The increase of 4 men was brought about by the sanction of 5 additional posts (2 for Darrang, one for Sibsagar, and 2 for Lakhimpur) and the abolition of one post in consequence of the revision of the kanungo establishment for the *ilam* estates in Sylhet. Formerly, non-cadastral areas in the Assam Valley were either excluded from kanungos' circles, or at all events those officers paid very little attention to them.

Recently, under the Chief Commissioner's orders, the circles have been so revised as to include every portion of every district, whether cadastral or otherwise. Concurrently with this new arrangement, additional circles were created. The number actually entertained on 30th June was 23 in the first grade and 37 in the second. Four of the newly-sanctioned posts had not been filled up when the year closed.

The average size of a kanungo's circle was—

	Bighas.
Cachar	246,498
Sylhet (Jaintia)	235,224
Assam Valley	295,507

Since the redistribution in the Assam Valley the average area has become 345,422 *bighas.*

The amount of touring performed by kanungos did not reach the prescribed minimum in all cases. Four out of the 8 kanungos of Cachar and all the kanungos of Jaintia toured for over 250 days during the 15 months. In 7 out of the 8 circles of Nowgong, the kanungos spent more than 250 days on tour. Both the kanungos of the Tezpur subdivision were out for over 250 days, but in only one out of the 4 circles in Mangaldai did the kanungo tour sufficiently. The districts of Kamrup and Sibsagar are under settlement and the Land Records staff are under the control of the Settlement Officers. It is therefore immaterial to enquire whether the kanungos of those districts did the prescribed amount of touring according to the rules laid down for kanungos generally. The kanungos of the Lakhimpur district failed to do sufficient touring. The greatest amount of touring was again done by Gobinda Nath Datta of the Dhing circle in Nowgong, who is reported to have been 353 days away from headquarters. Tara Nath Bora, of the Doboka circle in the same district and Jajneswar Datta, of Jaintia, coming next in order with 316 and 315 days, respectively.

No information has been received of the work done by the Government Surveyor of Dibrugarh.

The total length of check lines run by kanungos in testing mandals' and patwaris' work was 1,729·95 linear miles, or 9·97 linear miles per square mile of fluctuating cultivation, against 11·80 linear miles per square mile of fluctuating cultivation in the preceding two years (1901-1903). These figures are on the whole satisfactory. The prescribed minimum of 4 linear miles per square mile of the fluctuating cultivation was achieved in all the circles in the province except eight, *viz.*, 4 in Jaintia, the Roha circle in Barpeta, the Southern circle in Golaghat, and the Eastern and Northern circles in Jorhat. Of the above, Jaintia has little fluctuating cultivation, and as what there is, is often surveyed by the kanungo himself, it would be waste of time for him to run check lines. The greatest length of check lines (145·66 linear miles) was run by Kudratali, officiating supervisor kanungo of the Barkhetri circle in Kamrup; Ratiram Das, of Bijni, and Kamalnath Das, of Sidli in Goalpara, come next with 89·37 and 66 miles, respectively. Kinaram Das, officiating supervisor kanungo, of North Lakhimpur, and Amritram Datta, of the Eastern circle, Sibsagar sadr, discovered 95·16 and 90 acres of concealed cultivation. Large areas of concealed cultivation were also discovered by Sibnath Deka, of North Lakhimpur (44·67 acres), Lakhikanta, of Chhaigaon (50·90 acres), Kamalnath, of Sidli (29 acres), Manuram, of Bengbari (26·37 acres), Molan Chandra Bora, of Silghat (21·81 acres), and Kan Nath, of Hajo (21·15 acres). The work of Parsuram Barthakur, supervisor kanungo of the Tinsukia circle, was found to have improved this year when inspected by me and by the Superintendent of Provincial Surveys. The work of Gopal Chandra Rajkhowa, officiating supervisor kanungo of the Chabua circle, was found unsatisfactory. During the period under report the grant of field allowances to supervisor kanungos at Rs. 10 and Rs. 5 each per mensem for good work in the field was sanctioned by the Local Administration. These allowances are said to have proved a satisfactory stimulus to good work, which is the purpose for which they were created. They are liable to be stopped at any time. It is the practice never to grant an allowance indefinitely, but to grant it up to the end of the year. This compels fresh consideration of each case each year.

Tours and inspection by Sub-Deputy Collectors.

9. The statement in Appendix B shows the touring and work done by the Sub-Deputy Collectors. The districts of Kamrup and Sibsagar being under resettlement, the Sub-Deputy Collectors in those districts, whether in charge of tahsils or of subdivisions, were mainly employed on resettlement work under the instructions of the Settlement Officers. They did a fair amount of touring and tested mandals' work, though in many cases the amount of touring and testing done was not up to the minimum prescribed

by the rules. The Sub-Deputy Collectors in charge of the Dhubri subdivision (Babu Dwarika Nath Chaudhuri and Maulvi Mafizur Rahaman) did the required amount of touring and checked mandals' work sufficiently. In both the subdivisions of Cachar and in Sylhet testing of patwaris' papers by Sub-Deputy Collectors was sufficient, but the touring done fell short of the prescribed minimum in the Hailakandi and Gwainghat tahsils. The Sub-Deputy Collector, Hailakandi, was occupied with a number of settlement, miscellaneous and fishery cases. Babu Prabhat Chandra Chatterjee, Sub-Deputy Collector, Mangaldai, could not do the required amount of touring, as, owing to the absence of a second officer for nearly four months during the touring season, he had to remain at headquarters while the Subdivisional Officer was away on tour. His checking of mandals' papers was satisfactory. Maulvi Abrar Husein and Munshi Didaruddin Bora were in charge of the Patharughat tahsil for 378 days; during this period they spent only 95 days on tour between them, a poor outturn of work. The Sub-Deputy Collectors in Nowgong and Lakhimpur sadr subdivision toured for a sufficient number of days. The Sub-Deputy Collectors (Babu Dwarika Nath Chaudhuri and Maulvi Abrar Hossein) in charge of the North Lakhimpur subdivision, failed to do the required amount of touring. The latter is mainly responsible for this, as out of 218 days during which he was in charge he spent only 37 days on tour. Babu Dwarika Nath Chaudhuri was also handicapped by having treasury and other important works in the subdivisional office to do, and could not be on tour for more than 118 days. The subdivision was without a Sub-Deputy Collector for 16 days. Leaving out of consideration the two districts under resettlement, the papers of all the mandals were checked except in the Dibrugarh subdivision, where, out of 76 mandals, work of 57 was examined. Srijut Bharat Chandra Das toured for the largest number of days and Babu Purna Chandra Mitra visited the largest number of villages.

Babu Krisna Kumar De continued to be employed on the colonisation of the Langai-Singla disforested area. With about five exceptions, all the Sub-Deputy Collectors worked well. One (Babu Mahendra Chandra De) was promoted to the rank of Extra Assistant Commissioner, Srijut Hem Chandra Gosvami and Srijut Benudhar Rajkhowa were seconded to settlement where they worked well. Babu Banga Chandra Chaudhuri also acted on settlement work for a few days. Before and after being so deputed he rendered great assistance to the settlement when tahsildar by disposing of a large number of mutations. Babu Debendra Kumar Mukharjee continued to be Assistant Settlement Officer, and rendered good service in that capacity.

Survey qualifications of tahsildars and mauzadars.

10. All the tahsildars in the province have qualified in surveying, with the exception of 4 exempted and 3 officiating in Darrang and Lakhimpur. One of the latter has been replaced by a Sub-Deputy Collector since the close of the period under review.

On the 30th June 1904 there were 143 mauzadars, against 136 on the 31st March 1903. The increase was due to formation of new mauzas and substitution of mauzas in place of some tahsils in Kamrup and Nowgong. Of the 139 mauzadars in the Assam Valley, 36 possess first class and 50 second class survey certificates, and one is exempted from passing in surveying. Only one of the Surma Valley mauzadars is qualified in surveying. Now that it has been ruled that the mauzadar will only be an agent for collection of revenue, and will have no concern with its assessment, the checking of maps and settlement papers or *faut ferar* and *jotrahin* lists, it is immaterial whether this class of officers qualify themselves in surveying or not.

Inspection and testing by tahsildars and mauzadars.

11. In the Assam Valley districts very little testing was done by the tahsildars, who are not Sub-Deputy Collectors. The one tahsildar of this class in Kamrup (Srijut Udoy Chand Barua) was on leave for nearly 11 months, and did no testing. Srijut Rabi Chandra Sarma, tahsildar of Tezpur, examined the papers of 12 mandals and tested the field work of 7 by running 2·27 linear miles of check lines. Srijut Santiram Hazarika, of the Nowgong sadr tahsil, examined mandals' papers sufficiently, but did no testing of field work. Srijut Ganga Nath Sarma, of the Chutia tahsil, did not inspect the work of a single mandal.

The tahsildar of Silchar and the naib tahsildar of Gwainghat in Sylhet did no inspection of patwaris' work. The latter held charge of the tahsil for a part of the period only.

The amount of inspection done by the mauzadars in the Assam Valley was on the whole fair. All the mauzadars of Nowgong, 4 out of the 7 mauzadars of Goalpara, 7 out of the 14 mauzadars of Kamrup, and 2 out of the 17 mauzadars of Darrang, examined mandals' papers and tested their field work. Two mauzadars of Golaghat

and 4 of Sibsagar sadr also checked mandals' papers. The mauzadars of Jorhat were busy with resettlement work under the orders of the Settlement Officer, and could do no testing of mandals' papers. The inspection done by the mauzadars of North Lakhimpur was very insignificant. Out of the 13 mauzadars, only 2 did any testing. The total number of mandals whose papers were examined and checked was 214.

Inspection of Land Records staff by Deputy Commissioners, Subdivisional Officers, and Extra Assistant Commissioners.

12. In all districts the Deputy Commissioner devoted more or less time to the inspection of the Land Records' staff during the period under report. This includes the districts of Kamrup and Sibsagar, where settlements were in progress and less attention from the district officials was necessary, since the operations of settlement constitute a continued inspection. The Deputy Commissioners of Darrang (Mr. Lees), Nowgong (Captain Playfair and Major Halliday), Sibsagar (Mr. Reid), and Lakhimpur (Major Cole) did a considerable amount. They tested the papers of 125 mandals. Messrs. Jackson and Cuming and Major Cole ran check lines, and Mr. Jackson also discovered some concealed cultivation. Major Cole paid special attention to this very important work.

The officers in charge of all the subdivisions, except Barpeta, inspected the work of the Land Records' staff to some extent. But on the whole the amount of inspection done was far less than in previous years, the total number of mandals and *patwaris* inspected by Subdivisional Officers and Extra Assistant Commissioners being only 77 against 192 in the preceding 2 years and 236 in 1900-1901. Mr. Cornes, Subdivisional Officer, North Lakhimpur, did the largest amount of inspection. He examined the papers of 20 out of 33 mandals in his subdivision, and also ran check lines. Of the Extra Assistant Commissioners not in charge of subdivisions, only Srijut Krishna Chandra Chaudhuri (Tezpur) checked mandals' work. He examined the papers and tested the field work of 15 and 4 mandals, respectively.

State of Land Records.

13. There was no plains district that was not visited either by me or the Superintendent during the year under report. Lakhimpur received particular attention, as the Land Records of that district, owing to the backward state of education and other causes, require it. The Superintendent of Provincial Surveys inspected mandals' work in Nowgong, Lakhimpur, and Goalpara, generally in the field. The progress of settlement operations in Kamrup and Sibsagar renders unnecessary inspection in those districts, or rather the work there is continually being inspected by the processes incidental to settlement. In last year's report I commented unfavourably on the Land Records' staff of the Lakhimpur district, and the following extract from inspection notes in that district may be reproduced:—

North Lakhimpur.—The present kanungo is one Kinaram mandal, acting for 2 months in place of Shibnath Deka, who took leave from 1st October. I cannot find any records of the extent to which Shibnath checked the mandals' papers at the regular settlement. He is required to do so, *vide* for instance rule 93 on page 156 of the Land Revenue Manual. He should check 10 per cent. of the calculations of area in each *dagchitha*, and the same number of calculations of revenue in each *jamabandi*. There is no return or statement to show whether this precept is actually obeyed. The weekly statement of work contains a column—column 4, headed 'names of villages of which papers examined,'—but this I find is generally blank for the period when the mandals are at headquarters—*i.e.*, it is understood to mean only examination of papers in the field. This of course is of the highest importance, still it is also important to check the office work of mandals, *e.g.*, their area calculation and revenue calculation. Next time when the mandals are at work the supervisor kanungo should show in column 4 number of villages of which papers are examined, and this will be understood to mean that he has checked the requisite percentage in each village. Sub-Deputy Collector should see to this, and see in particular that he really does check the requisite proportion of areas calculated. We must not leave too much to the mandals.

I find that at this subdivision no one has even heard of the Chief Commissioner's letter No. 1150Rev.—5178R., dated the 19th December 1902, to my address. This is a year ago. Copies were of course sent by me to every Deputy Commissioner, and the Sub-Deputy Collector, who has just come from Dhubri, says he saw it there and acted upon it, *i.e.*, ordered the mandals to prepare lists of new fields (whether taken by squatting or by application) and relinquished fields, etc. I have verbally explained it. The Sub-Deputy Collector has taken a copy of the letter and should explain personally to each mandal.

With regard to the Chief Commissioner's order about short check lines (Circular No. 42R., dated the 22nd December 1902) and a note book, a copy of this circular exists, and so far as I have been able to ascertain in the field it is being generally observed. I think mandals have realized that time is not to be wasted on long lines from one theodolite station to another, but that triangulation is admissible.

Regarding the three circles in the sadr, the Superintendent of Provincial Surveys writes:—

Tinsukia circle.—Considerable progress has been made during the past year towards accuracy of maintenance of maps and records in this circle. The supervisor kanungo, Parsuram Barthakur, is able and energetic, and shows intimate acquaintance with the ground in his circle.

Chabua circle.—Maintenance work in this circle is decidedly bad. One mandal's circle had not been tested by the supervisor kanungo for a whole year, and in one village of another mandal's circle no less than forty fictitious fields were shown on the map and in the papers. Moreover, the raiyats were assessed for these lands, which they had neither applied for nor cultivated. The supervisor kanungo has no control over the mandals of his circle. He is an office man, and very little use in the field.

Dibrugarh circle.—There has been some improvement in the maintenance work in this circle. The map of the Dibrugarh town was not kept up to date. The services of the survey master and his first-grade pupils should be utilised to remedy this.

I am glad to be able to confirm the Superintendent of Provincial Surveys' opinion of the Tinsukia circle after full inspection in the field at Tinsukia and Jaipur. There are distinct signs of improvement. The Chabua circle I did not inspect beyond looking over the kanungo's papers in office, where I found he had a great deal of work to do in checking and revising the mandals' statements, etc., one particular "*jamabandi milan naksa*" was covered with corrections. The kanungo's work so far appeared to me satisfactory. The remarks by the Superintendent afford a useful illustration of the importance of testing work in the field.

The Superintendent of Provincial Surveys inspected also in the districts of Nowgong and Goalpara. He found the land records in Nowgong fair.

Regarding Goalpara (*i.e.*, the Eastern Duars) the following is an extract from his notes:—

In Guma circle the work of some mandals was found bad. In most mandals' circles the crop entries were defective. In the Sonthal concession area there came to light a practice on the part of the mandals to treat lands once cultivated but allowed to be fallow for a year or two as newly broken ground. As within this favoured area of 25 square miles lands newly reclaimed from jungle pay no rent for the first year and only half rent for the second year, the practice has resulted in a loss of revenue to Government.

The maps and records of the Bijni circle were as a whole found to have been kept well up to date, reflecting credit on Supervisor Kanungo Ratiram Das. Many of the extension survey maps of this district could be reproduced by the Vandyke process with benefit to the Land Records staff.

Changes in the system of land records.

14. The most important change in the system of land records consisted in the Chief Commissioner's orders that henceforth non-cadastral cultivation was to be mapped as far as possible, not indeed so minutely and elaborately as is done in cadastral areas, but by triangulation and without attempt to locate the block with reference to known points. Mandals should be able to do this without difficulty. Blocks of cultivation are to be roughly indicated on standard maps for the guidance of district officials. As a result of these orders there will be a map from which to calculate areas instead of the rough methods formerly in vogue, except in Sylhet and Cachar, where it has always been the practice to have a map.

Some changes were also made in the procedure for testing *faut-ferar* lists. The period for testing these lists has been extended up to the cold weather following the May in which it is prepared by the mandals. The mandals are also to include in this list in a separate column all lands of ryots who are *Jotrahin* (bankrupts) and have abandoned the whole of their cultivation. Cases of hardships (coming to notice by petition or otherwise) are also to be included by mandals in the *Jotrahin* list.

Condition of survey marks.

15. The statement in Appendix C gives the condition of survey marks in the province on the 30th June 1904. The increase in the total number is due to the demarcation of extension survey areas and certain *ilam* and disforested areas in the Surma Valley. A number of marks wrongly shown as "mounds on the boundaries of grants" have been transferred to the head "traverse stations shown by mounds and boughs." The number of marks lost or left unvisited was again very large in Cachar sadr, Barpeta and Mangaldai coming next in order. The percentage was very high in the last named subdivision. The percentage of marks left unrepaired was also high in the Kamrup district. In view of the recent orders of the Chief Commissioner that mounds and boughs indicating survey stations in jungle and fluctuating areas need not be maintained, there will, it is expected, be a substantial reduction in the number of stations so demarcated and a corresponding reduction in the number of marks left unvisited and unrepaired.

Demarcation advances.

16. Certain special orders of the Chief Commissioner have issued during the year under report regarding these advances, the most important being that henceforth charges for demarcation shall not exceed ¼ anna per *bigha* for established cultivation and one anna in land newly taken up (Secretary's letter No. 363Rev.—2570R., dated the 7th June 1904). This order is to have retrospective effect. Inasmuch as the cost to Government of demarcation, *viz.*, cost of stones, cost of carriage by steamer and by land, cost of demarcation kanungo, and so on, have almost invariably exceeded a sum equivalent to these rates per *bigha*, it follows that now a considerable sum at present shown as advance recoverable may be written off and this will be done as soon as the accounts, which from the nature of these advances and the method of their recovery have a tendency to get into an inextricable confusion, can be placed on a sound footing. Already in course of the examination of the district figures a sum of Rs. 9,368-6-10 (cost of unused stones, cost of demarcation of annually settled estates, etc.) was found irrecoverable. This and Rs. 8,400-8-10 reported by Deputy Commissioners as irrecoverable, were written off with the sanction of the Hon'ble the Chief Commissioner. The statement of balances outstanding on account of demarcation advances received from the district officers and mentioned in paragraph 17 of last year's report was checked, and the figures furnished were found incorrect in case of all the districts. Deputy Commissioners were furnished with detailed statements showing the advances made from the very commencement of demarcation work, and were asked to reconcile differences. This has not yet been done in the case of Cachar, Sylhet, Darrang, and Nowgong. The Deputy Commissioner, Lakhimpur, also has not been able to reconcile the figures up to date.

The balance outstanding for recovery on the 31st March 1904 under all the heads of advances was Rs. 56,852-0-3. This with the advances made amounted to Rs. 57,196-3-3 on the 30th June 1904. Of this, Rs. 21,203-15-9 were recovered, and Rs. 17,768-15-3 written off, leaving a balance of Rs. 18,223-4-3 for recovery. Rupees 15,855-7-8 of the balance are outstanding against the Sylhet district. But the bulk of this will have to be written off, as (1) under the orders of the Hon'ble the Chief Commissioner already quoted a portion of the charge on account of demarcation of the *ilam* estates will become irrecoverable, and (2) only a small portion of the amount spent on demarcation in Langai-Singla area will be recoverable from the colonists. I went into this matter in course of a recent tour and have asked Deputy Commissioners for certain information. The only other districts in which the outstandings are not insignificant are Darrang and Lakhimpur, where Rs. 2,245-5-9 and Rs. 1,631-0-5 are outstanding on account of demarcation of areas surveyed by local agency. Steps are being taken for early adjustment.

Mauza book.

17. With the commencement of settlement operations in Sibsagar and Kamrup in 1902, the maintenance of the mauza-book in those two districts was discontinued. The mauza-book is now being maintained in the three remaining districts of Assam proper, *viz.*, Nowgong, Darrang, and Lakhimpur. The total number of villages for which the book is maintained is the same as was reported in the last annual report, namely, 2,611 with an aggregate area of 2,363 square miles.

The ever-developing scope of duties on which Mr. Basu is employed left him less time than usual to inspect the mauza-book records during the period under report. It is worthy of note that the officer in charge of the settlement of Kamrup found the mauza-book distinctly useful, and says it would be more so if it were invariably and correctly kept up. It actually forms the only repository where certain statistics, *e.g.*, of annually-settled land, are available after the lapse of a few years. The standing orders regarding the papers of annual settlements are not very clear, but they have been understood by record-keepers to mean that such papers are to be destroyed after two years, *vide* for instance Rule 21A on page 210 of the Land Revenue Manual. But apart from this the mauza-book presents statistics in a convenient and easily accessible form, and as such may be very useful.

Enquiry into the Nambor reserved forests.

18. Under the orders of the Hon'ble the Chief Commissioner, the Rai Bahadur made a special enquiry last cold weather into the agricultural capabilities of the Nambor reserved forests. The enquiry amounted practically to a search for land suitable for low land rice cultivation. A report was submitted to the Chief Commissioner with this Department letter No. 1369, dated the 14th April 1904. Orders on the proposals made in the report had not issued when the year closed.

CHAPTER III.

SURVEY, &c.

Synopsis of the work done.

19. The Provincial Survey Detachment undertook during the 15 months under report the traverse operation of grants and villages detailed below :—

(*a*) Traverse and boundary survey of tea grants—

	Sq. miles.
Darrang	29·52
Nowgong	26·45
Sibsagar	15·20
Lakhimpur	86·68
Total	157·85

(*b*) Traverse for cadastral survey—

Cachar	3·76
Darrang	2·48
Total	6·24

(*c*) Traverse survey of area cadastrally surveyed—

Kamrup	29·00
Total area surveyed in square miles	193·09

	Linear miles.
(*d*) Sylhet—	
Survey of Assam-Bengal Railway line	111·21
Besides the above, Mr. O'Donel surveyed and demarcated the boundary between the Garo Hills and Rangpur	28·53
The Garo Hills and Mymensingh	15·24
Kamrup and pargana Habraghat in Goalpara	7·79
Sylhet and Hill Tipperah	2·06
	53·62
Total linear miles surveyed	164·83

Traverse survey and its cost.

20. Traverse survey was carried out principally in the Brahmaputra Valley. As in previous years, the work was supervised entirely by Mr. Shaw. Traversing of tea grants continued, and comparison is being made between the boundaries as now pointed out to the traverse surveyors and as mapped at the time the grants were settled. Only a small area of disforested reserve and a length of the Assam-Bengal Railway line was traversed in the Surma Valley. The total area traversed during the period under report was 193·09 square miles and 164·83 linear miles. So there has been an improvement in the outturn of the detachment. The total cost incurred on this work was Rs. 18,893-7-7 and the average cost rate per square mile was as follows—

(1) Traverse survey of tea grants—

	Rs.	a.	p.
Darrang	76	3	6
Nowgong	107	12	0
Sibsagar	131	9	3
Lakhimpur	98	5	1

(2) Traverse survey of areas for cadastral survey or already cadastrally surveyed by local agency—

	Rs.	a.	p.
Kamrup	20	10	10
Darrang	10	8	4
Cachar	319	2	5

(3) Traverse survey of the Assam-Bengal Railway line in Sylhet, Rs. 10-12-8 per linear mile.

The high rate per square mile of tea grants is assigned to the same cause as last year, that is (1) the delay and irregularity in the supply of labour by proprietors and (2) isolated situation of the grants dealt with. With reference to (1) it must be stated that it is the practice to call upon grantees to supply labour and to point out their boundaries, as they are bound by law and the condition of their leases to do so. If, however, the result is merely to cause the cost to be excessive it would seem desirable for the surveyors to provide at least their own labour. The boundaries must be pointed out by the grantee. The Superintendent of Provincial Surveys has been invited to consider this point further.

In Cachar the area traversed was very small, and far away from the main field of action. Besides this, a Sub-Surveyor and a squad sent there in June 1903 could not proceed with operations owing to sudden inundation, and had to go there again to do the work. This added largely to the cost of the survey.

Extension survey in non-cadastral areas in the Assam Valley districts.

21. During the period under report there was no extension survey, as that term has been used in former reports, *i.e.*, to signify the extension of cadastral mapping based on a traverse survey generally done with the theodolite. But the Chief Commissioner decided that mapping (with a chain) by the local mandal should be substituted for the rough methods formerly in vogue in extra-cadastral areas. The mapping was limited to the settled or occupied areas only, and was effected by chain triangulation. Statement D in the Appendix shows the progress made in substituting maps for measurements in non-cadastral circles and the amount of rewards due to mandals for the work. As the orders on the subject issued late in the season, only little progress could be made. Nothing could be done in this direction in Sibsagar, the kanungo establishment having been wholly occupied with re-settlement work. The Deputy Commissioner, Darrang, reports that he deferred work in the sadr subdivision awaiting the appointment of two additional supervisor kanungos for which sanction was accorded in view of the extra work thrown on the Land Records staff by the new orders. In the Kamrup sadr subdivision not much could be attempted, owing to the employment of the mandals in resettlement work.

Extension survey in the Surma Valley.

22. Sub-Deputy Collector Babu Brindaban Chandra De, with his Land Records staff, effected surveys of about 15 square miles in Sylhet. The area dealt with by him comprised (*a*) estates under casual and intermediate settlements which have to be re-settled, (*b*) waste lands for which new applications for settlement have been received, (*c*) a few annually-settled plots, *i.e.*, plots which were taken up as waste land by raiyats. This survey work in Sylhet differs from that in the Assam Valley, inasmuch as all lands under resettlement, *i.e.*, which have been previously settled, were already surveyed at time of previous settlement. In Cachar also a small amount of extra-cadastral survey was done by the local staff. It has always been the practice in the Surma Valley to make a map at settlement. This is different from the rough Assam method of measuring the sides of a field and working out an area on the assumption that it is rectangular.

Survey and settlement. Langai-Singla disforested area.

23. In the Langai and Singla Valleys colonisation of the disforested area proceeded, the necessary survey and record writing being done by the Land Records staff under Sub-Deputy Collector Babu Krishna Kumar De. The work completed during the fifteen months under review was briefly as follows :—

(1) Revision of the survey of 13 blocks covering an area of 23,960 *bighas*.

(2) Splitting up of *ijmali* (joint) allotments in sheets Nos. 1-4 (Langai Valley).

(3) Inking in of the maps of 22 blocks.

(4) Computation of areas in all the sheets except one.

(5) Preparation of *chithas* and *jamabandis* of all blocks.

(6) Preparation and issue of *pattas* of five blocks (or sheets).

The number of *pattas* issued was 229, covering an area of 6,655 *bighas*. The annual revenue and local rates assessed amount to Rs. 1,873-4 and Rs. 110-7, respectively. This is exclusive of one lease for an area of 5,142 *bighas* with a revenue of Rs. 1,607 and local rates Rs. 100-7, issued in 1902-1903 to Mr. Brown Constable of the Adamtila tea estate.

Besides these, the Sub-Deputy Collector made the alignment of a road through the disforested area in each valley for the construction of which Rs. 750 were sanctioned by the Hon'ble the Chief Commissioner in the Secretary's No. 65Rev.—1150R., of the 3rd March 1904. The construction of the road could not be commenced owing to

heavy and incessant rains in March and April. There were 125 applications for land pending. Of these 56 were disposed of, leaving a balance of 69. All these applications were handed over to the Sub-Deputy Collector by the Subdivisional Officer, Karimganj, in June 1904.

The work remaining to be done is :—

(1) Calculation of revenue and preparation of *pattas* and *tauzis* of five blocks.

(2) Calculation of areas and completing the *chitha* and *jamabandi* of one sheet.

(3) Preparation of the *pattas* and *tauzi* of one block.

(4) Realization of survey and demarcation fees in some cases.

(5) Comparison of *pattas*, etc.

CHAPTER IV.

RESETTLEMENT.

Kamrup and Sibsagar.

24. Paragraphs 25 to 29 of last year's report described the inception of resettlement in Sibsagar under Mr. L. J. Kershaw and in Kamrup under Mr. H. C. Barnes. It is satisfactory to be able to report again that the operations continued without hitch, and received the commendations of the Hon'ble the Chief Commissioner at inspection. The staff employed was as follows :—

District.	Officers.		Period employed.
	Name.	Designation.	
1	2	3	4
Sibsagar ...	Mr. L. J. Kershaw ...	Settlement Officer ...	1st April 1903 to 30th June 1904.
	Srijut Rajani Kanta Bardalai.	Assistant Settlement Officer...	Ditto ditto.
	„ Radha Kanta Handiqui	Ditto ditto ...	Ditto ditto.
	„ Benudhar Rajkhowa...	Ditto ditto ...	20th October 1903 to 30th June 1904.
Kamrup ...	Mr. H. C. Barnes ...	Settlement Officer ...	1st April 1903 to 30th June 1904.
	Munshi Muhib Uddin Ahmed	Assistant Settlement Officer...	1st April 1903 to 8th June 1904.
	Babu Harendra Kumar Ghosh	Ditto ditto ...	9th to 30th June 1904.
	Srijut Hem Chandra Goswami	Ditto ditto ...	21st November 1903 to 15th April and 1st to 30th June 1904.
	Babu Debendra Kumar Mukherji.	Ditto ditto ...	1st April 1903 to 30th June 1904.
	Babu Banga Chandra Choudhuri.	Ditto ditto ...	16th April to 31st May 1904.

Each district therefore took on a new Assistant Settlement Officer, *viz.*, in Kamrup Srijut Hem Chandra Goswami and in Sibsagar Srijut Benudhar Rajkhoa. All worked well.

During the recess of 1903, each Settlement Officer submitted a group report with proposed rates. In Kamrup the group was called the Bojali group and consisted of 115 villages. The existing revenue was Rs. 1,19,081, the proposed revenue was Rs. 1,11,399, or a decrease of Rs. 7,682. In Sibsagar the group comprised the greater part of the Golaghat subdivision, or 155 villages, with an existing revenue of Rs. 2,11,308, and a proposed revenue of Rs. 2,11,168. In the statement in Appendix E will be found details of the number of villages dealt with both in the recess of 1903 and the field season of 1903-1904. As to the methods of work, its accuracy, and the means taken to ensure against mistakes, I may say generally that in repeated inspections both in the field and in office I satisfied myself that it was being well done. The Honourable the Chief Commissioner has since the close of the year under report inspected both offices and expressed himself in commendatory terms.

In regard to the recess work of 1903 it is necessary to mention that there had then been practically no attestation. The group reports were submitted unattested, as it was known that changes due to attestation could not be so numerous as to have any material effect on rates, incidence, etc. Hence in the statement in Appendix E the number of villages shown under the headings "maps faired" or "records faired" is very small, or *nil*. The work of recess 1903 was mostly area calculations, copying maps (but not making the final or fair copy, this could not be done till after attestation), compilation of figures for report, and so on.

25. I now subjoin some remarks extracted from inspection notes recorded in the field (or in office as the case may be) on the details of settlement procedure as adopted in the two districts.

Kamrup (*recess* 1903).– I inspected this office in July 1903. The staff at work now, besides the Settlement Officer and Assistant Settlement Officers, is 31 mandals and 3 Inspectors. These are additional mandals. The regular settlement is going on as usual at the tahsils. It will be finished in about a fortnight. Then the Settlement Officer intends to bring over more mandals to help at settlement work.

The state of work in this office now is that the tracing of the maps of the Bojali group has been finished. The Settlement Officer's group consists of 135 villages. Of these, 115 are cadastral. Twenty are non-cadastral and mostly uncultivated. Of the 115 maps, all except 10 were traced on bank-post paper. The others were done on spare copies of the printed cadastral map.

After tracing, the next step was calculation of areas. This is done as follows:—

The *dag* numbers are copied serially into the area slip, the slip contains 4 columns for (1) new number, (2) old number, (3) area, and (4) area passed by Inspector.

Calculation of area is done twice over for each new *dag*. The old *dags* are accepted without recalculation, the area being copied from the old cadastral *khasra*. Such *dags* are marked in red. The new *dags* being calculated and entered each upon two different slips, the Inspector compares every *dag*. Where the difference does not exceed 1 per cent. he takes the mean. If there is a greater difference, a third calculation is made, even more if necessary. The Assistant Settlement Officer compares a certain percentage before passing the village. Then the village areas are totalled, and if the difference is less than 1 per cent. it is distributed, so as to make the total agree with the original cadastral area. If the difference is greater, an investigation takes place, and the difference is generally explained with more or less trouble.

At the present date, 45 villages are quite finished and 70 remain. But 63 have been calculated by the mandals, and it only remains to strike the new total, and see if it agrees with the old area.

The next step will be writing the *dagchitha* and classification register. The classification register is the register prepared in the field showing only number of *dag* and a sign indicating the class or classes into which the *dag* has been thrown. After area calculation as already described, it becomes necessary to enter the *dag* area in the classification register (and also in the *dagchitha*), and where a *dag* has been divided into two or more classes some further calculation of area is necessary. The mandal enters these areas in the *dagchitha* and in the classification register. The next step is then to fill up the general register showing all the villages, with the area of each class in each village. In this register *khiraj*, *nisf-khiraj* and special tenures and unsettled area are kept separate. The old classes also are shown. When this register is completed it will form the village statement desired by the Chief Commissioner to accompany the rent rate report of the tahsil.

It will also be necessary to verify the crop area. Where two crops grow in a field, the total of which has altered in the cheeking, the separate portion will have to have each a modified area entered. The Settlement Officer proposes to do this in office—generally by adding to or deducting from the largest crop (when the several crops are of unequal size).

The office is about to commence the compilation of statements,—calculation of incidence, etc., etc. The Settlement Officer expects it may be ready by the end of August. After that the Settlement Officer can begin writing his report. It is needless to add that there should be no unnecessary delay.

Kamrup (field season, 1903-1904).

26. I inspected the attestation and classification parties of the Settlement Officer in the field in the beginning of February 1904. Three parties were then at work from Roha to Tambulpur. They were composed as follows:—

One classification party of 10 men and 2 Inspectors under Assistant Settlement Officer Babu Debendra Kumar Mukherji; one attestation party of 10 men and 2 Inspectors under Mr. Clifford (Munshi Muhib Uddin Ahmad, Assistant Settlement Officer, temporarily incapacitated); and one combined party of 6 with an Inspector attesting and 4 men with an Inspector classifying under Srijut H. C. Goswami, Assistant Settlement Officer. Classification invariably precedes attestation, and to some extent is itself the subject of attestation,—but the attesting kanungos have not power to alter a classification which has itself been effected by a classing kanungo. But when an attesting Inspector disapproves of the classing, and it has not been examined by the classing Inspector, he alters it. In other words, none of the staff alters what has been fixed by another official of equal rank. Besides classification, the attesting party have orders to examine 20 per cent. of the total number of the *dags* for survey errors, and the same number of *dagchitha* entries. They initial what they check in the classification register and in the *dagchitha*. By counting these initials it is ascertained (*a*) how many corrections of the map were examined, (*b*) how many *chitha* entries were examined, (*c*) how many classifications of *dags* were tested. The Settlement Officer prescribed a form of return for each village

This shows the above particulars (1) for each attesting kanungo, (2) for each attesting Inspector. A form of report is prescribed to be completed by the Assistant Settlement Officer showing the details of his examinations ending with a certificate that "the papers are now complete, and I pass the village." A word must be said about mutations. All officers in the district having powers were ordered to carry out mutations as soon as possible. As some of these officers, *i.e.*, Sub-Deputy Collectors, are tahsildars, whose duty it is to collect revenue, they were unable, or at all events failed, to complete them, a fact which caused great delay to settlement. The party cannot pass on till the village is completely finished, and failing any one else, the Assistant Settlement Officer has to effect mutations. There was really no reason why the tahsildars should not have completed all mutations under the new rules in good time. Munshi Muhammad Haniff and Munshi Saifuddin Ahmad, both in succession at Baroma, conspicuously neglected this duty. Considering how the villagers welcome this (to them) new and easy method of registering names, I cannot help thinking that tahsildars might have managed to complete all their villages either before collection began or concurrently with it. The tahsildar of Rangiya, Babu Banga Chandra Choudhuri, by the 24th January 1904 had done 114 out of 210 villages, whereas Baroma had done only 9 out of 79. The ordinary tahsil work in Rangiya is much heavier than in Baroma.

The process of attestation seems to be carried out efficiently, if slowly. The kanungos habitually tested more than the prescribed number of *dags*, in some cases they did the whole village. This caused delay in their work, and it was necessary to remind them that where no errors were discovered the process of attestation need not be exhaustive. No separate record was kept of the number of errors discovered, but it could be ascertained from the papers. The commonest error was an entry by the mandal of the man in actual possession under the column reserved for the name of legal holder. But though this is technically an error (as the mandal has no right to effect mutations), there is no reason to suppose that the records were seriously or even slightly vitiated by this action. The people were very anxious to get it done, and except in cases of fraud, of which there were few, the mandal was only anticipating the order of the Assistant Settlement Officer. The rate of progress was found to be in *dags*, about 1,000 per week for each kanungo of the attesting or classing parties. The work of the superior officers proceeded *pari passu*. The records were in all cases brought up to date, except as regards *khiraj* sub-tenancies.

27. I inspected the Sibsagar settlement in the field and in office on various dates.

Sibsagar.

The procedure of the Sibsagar settlement is as follows :—

The field map of 1902-1903, having been brought into office in 1903, was traced on two spare cadastral sheets, *i.e.*, making two copies, each of which show the corrections in green ink. In the cold weather of 1903-1904, one copy was used by the mandal in the field for incorporating new lands, etc., in fact for the *dariabadi* and regular settlement. The other copy was used first for classing, the class of each *dag* being shown in the classing book. Where needful, *dags* were divided with pencil lines and letters used to denote separate classes. A note (*badar* list) was made by the classer of any apparent errors of survey for the assistance of the attesting party to follow. Then the same map was used again for attestation. The attesting kanungo had to check the map and *chitha* (10 per cent. of the *chitha* entries and 25 per cent. of the green ink entries on the map); he had with him the classer's *badar* list; he made a list of changes effected and he made a list of all disputes in a prescribed form. Following him came the Assistant Settlement Officer (there was constant testing by the Inspector meanwhile), who decided all disputes, did some testing, and disposed of all mutations. Each officer, *i.e.*, the attesting kanungo, the Inspector, and the Assistant Settlement Officer recorded his orders in a form which, with the classer's *badar* list, the attesting kanungo's *badar* list and dispute list is attached to the *dagchitha* of the village. After a certificate had been attached to the effect that the village had been passed, the papers went to the camp office, where a special party inked over in green the pencil alteration of the attesting kanungo. At the same time, they carried the alteration into the other (*i.e.*, the mandal's) map and the *dagchitha* and *jamabandi*. Thus, both maps and the village papers were brought up to date. These papers came to office about 15th May 1904, after the mandals had finished their regular settlement. Office work consists (*a*) in the preparation of regular settlement papers, (*b*) incorporation of the *dariabadi* and regular settlement in the resettlement maps and papers, (*c*) the abstraction of statistics village by village for assessment, (*d*) final tracing of maps. For facilitating (*a*) the mandal brought in a list in three columns showing the new *dags* (*daryabadi* and regular settlement) and *dags* relinquished. With the help of this the *chitha*, *jamabandi*, and both maps were brought up to date.

There is a final checking of the work of the camp office, and then the papers, being up to date, are ready for abstraction. It must be noted that in 1903 there had been no attestation, and the village totals then compiled have since been attested and in some cases altered. The alteration would not be of any great importance to the general results. Area calculation also proceeded in 1903.

Prior to abstraction, the first step is to enter areas in the class book from the *dagchitha* after calculation, where a *dag* has been subdivided as regards class. The total of the class book must equal the village total. Columns 3 and 4 of the *dagchitha* are next filled up (*i.e.*, kind of land and area). Columns 7 and 8 of the *jamabandi* follow (the corresponding columns). Two comparisons follow (*a*) the two maps with the *dagchitha*, every *dag*, (*b*) the *dagchitha*, class book, and *jamabandi*, each *dag*. When this has been done the maps are ready for tracing.

Then follows the *dagchitha* abstraction. It is necessary to show under each tenure the total of (1) each class, (2) each crop, (3) each area sublet, (4) area held by coolies and foreigners. This is done first page by page of the *dagchitha*. The totals for the village are added up at the end of the book. Then a comparison is made of the total of each class as per the *dagchitha* and the class book. It may be remarked here that the difficulty of locating a mistake when the totals do not agree is prodigious. A useful help in this difficulty is to write exactly the same number of *dags* on each page of the *dagchitha* and similarly the same number of *dags* on each page of the class book. Thus, the corresponding pages in the two books ought to agree as to their totals, *e.g.*, the total of page 24 of the *dagchitha* must agree

with the total of page 24 of the class book. Comparison with the *jamabandi* must then be effected, but only the total of each tenure is available. The tenures in the *jamabandi* follow one another, and are kept distinct.

From the totals obtained (and checked) by *dagchitha* abstraction, the village statements are prepared and unit incidences calculated.

I have omitted to mention that the old and new *dagchithas* for Jorhat and Golaghat were compared in 1903. That for Sibsagar sadr is being done in 1904, or at least in respect of one column, that for *pattadar's* name.

The *dagchithas* and *jamabandis* are then faired, and after the Settlement Officer's rates have been sanctioned revenue calculation is taken in hand, and *pattas* are written and distributed. None of this has as yet been done (July 1904).

CHAPTER V.

AGRICULTURAL EXPERIMENTS.

The Experimental Farm, Upper Shillong.

28. *Season.*—The present report, being for fifteen months ending with June 1904, covers two potato seasons in the Khasi Hills, *viz.*, 1903 and 1904. In 1903, the rainfall during April and May was very short and seriously affected the outturn of the crop; the opposite was the case during the same two months in 1904, as the following will show :—

Rainfall in April and May 1903	...	...	...	6·80 inches.
Ditto ditto 1904	...	...	...	18·17 „

The rainfall of 1904 was on the whole favourable, but much damage (at least at the fruit garden, where a part of the potato crop was planted) was done by a severe hailstorm which took place on the 9th April. The spring months constitute a critical period of the agricultural season in these hills. The rainfall during the monsoon is always abundant.

29. The only field crops tried at the Farm in 1903 were potatoes, maize and flax. The results of the cultivation of these and of the potato crop of 1904 are reviewed below :—

The potato crop of 1903.—A little over 2 acres of land was sown in 1903 with 11 different varieties of potatoes. The crop was put down between the middle of February and first week of March. It germinated well, but was seriously affected by want of rain in April and May. There was heavy rain at the end of May, and the first part of June, which brought on blight, and the crop, as in previous years, succumbed to it long before it could reach maturity. On the whole, however, the outturn was not disappointing. On plots which had received the full allowance of cowdung 800 baskets per acre) and oilcake (20 maunds per acre) the yield amounted to about 116½ maunds to the acre. On plots which received dung alone, and no oil-cake, the yield was very poor, being only 47 maunds to the acre. The effect of adding 20 maunds of mustard cake valued at Rs. 50 was to enhance the yield by 69½ maunds worth about Rs. 80. The use of oilcake was thus proved to be financially profitable. The same result was obtained from the use of oil-cake in previous years. An experiment was made to test the comparative advantages of sowing tubers with the shoots intact and with the shoots broken off. The idea was to see whether by planting tubers with the shoots intact the crop could be made to ripen in time to escape the heavy rainfall which commences at the end of May and brings on the blight. In this respect the experiment failed altogether. In point of outturn, too, the experiment gave a negative result As sowing tubers with the shoots on involves extra labour and care, the existing practice of rubbing off the sprouts at the time of planting has its advantages.

30. *The potato crop of* 1904.—The total area sown was 1 acre and 6 poles. Twelve different varieties of potatoes were tried. Besides these, six new kinds, of which a small quantity of seed was obtained from New South Wales, were tried apart on a small plot. A part of the crop was grown at the fruit garden, and the remainder at the Experimental Farm. The crop at the fruit garden was much injured by a severe hailstorm on the 9th April. Nevertheless, it gave a satisfactory outturn, the total yield of tubers from 76 poles (a little less than half an acre) having amounted to 62 maunds 14 seers 8 chittaks, equivalent to an outturn of 131 maunds 12 seers to the acre. The crop at the Experimental Farm escaped the hailstorm, and gave a much heavier yield. In a field measuring one-eighth of an acre, the yield amounted to 242 maunds (or nearly 9 tons) per acre, and in another field with an area of 70 poles ($\frac{7}{16}$ths of an acre), the outturn came to 200½ maunds, or 7·4 tons per acre. Such a yield is exceedingly heavy for the Khasi Hills, where the highest yields in experimental harvestings on

record have never exceeded 85 maunds to the acre. The satisfactory outturns obtained at the Farm are attributable to liberal manuring and careful cultivation, particularly to the use of cake as manure. Repeated experiments in previous years have shown the efficacy and profitableness of this oil-cake as a manure for the potato crop. It has been always used at the Farm at the rate of 20 maunds to the acre.

A careful record was kept of the cost of cultivation of the potato crop. The total cost, inclusive of the value of seed, which had been saved from the previous years' crop and of the cost of spraying, an unusual item, amounted to Rs. 213-9-10. The estimated value of the crop, which yielded an aggregated outturn of 180 maunds 14 seers 8 chittaks, was Rs. 270-9, thus leaving a net profit of about Rs. 57. The profit would have been greatly more, but for the fact that several of the varieties of potatoes grown were unproductive, and the experimental nature of cultivation entailed a good deal of expenditure, which in ordinary cultivation would be wholly unnecessary.

31. Of the twelve varieties contrasted with one another, the seed of ten varieties were obtained at various times from England and France, one (the Magnum Bonum, which continued till last year to head the list in point of yield and freedom from disease) came from Mussoorie, and the seed of the latest imported kind known as the Patna was obtained last year from Bengal. Of the twelve kinds, those which gave satisfactory yields are the following in order of outturn:—Early Regent, Triumph, Harbinger, Magnum Bonum, and Flowerball. In point of freedom from disease, the Patna was the soundest of all. This variety is also likely to prove prolific. These six varieties are recommended for cultivation. The remaining six kinds have all along proved unprofitable, and will be discarded from future experiments. The six Australian varieties are not included in the above. This seed was sown in a separate plot of ground about the end of February. The young plants were greatly injured by the hailstorm. The outturn was nevertheless fairly satisfactory. The best was obtained from a variety called Early Rose, which yielded 13·7 times the quantity of seed used. The remaining five yielded 7 to 9 times the quantity of seed used. All the six varieties have round well-shaped tubers, a reddish skin, but a pure white flesh. The produce appeared to be perfectly free from disease, although in every other variety grown at the Farm a certain proportion of the tubers was found tainted with brown spots, indicative of the potato disease. The entire crop of tubers raised from the Australian seed, in all about half a maund, has been preserved for sowing next year.

32. The potato crop at the Farm was free from wet rot, to which the Khasia variety of potatoes is peculiarly susceptible, but it did not escape blight (*phytophthora infestans*) in spite of repeated sprayings with Bordeaux mixture. This well-known remedy was tried at the Farm in 1900 and 1901, but it was found ineffectual. The mixture gets washed off the leaves by rain before it can be effective. Last season, the experiment was tried again, and the precaution was taken of commencing the spraying early in the season. Instead of one or two sprayings as in previous years, the crop received as many as four. The first spraying was given in the first week of April, when the plants were a few inches high, and the last was applied in the first week of June. In a few plots certain beds, each one pole in area, were left unsprayed. These alternated with an equal number of sprayed beds. Although the sprayed beds eventually took the disease, they resisted it for a longer period, and did not die down till three or four weeks after the unsprayed beds had succumbed. The contrast between the two series of beds was very conspicuous at the time. The sprayed beds, having lived longer, naturally gave a larger outturn of potatoes, and the tubers on being cut through appeared to be less affected with the brown taint than those from the unsprayed beds. The actual results in point of outturn were as follows:—In one series of 28 beds, each one pole in area, the fourteen sprayed area gave an outturn of 16 maunds 35 seers, and the unsprayed yielded 14 maunds 7 seers. The increase due to the spraying was 19 per cent. on the outturn of the unsprayed area, equivalent to 30 maunds 34 seers per acre, valued at about Rs. 46-4. The cost of the spraying amounted to Rs. 32-4 per acre; the net profit due to spraying thus amounted to Rs. 14 per acre. In a second series, consisting of 18 beds, the increase due to the spraying amounted to 17 maunds 22 seers per acre, or 8·9 per cent. on the yield of the unsprayed beds. In this case the value of the increased yield was not sufficient to cover the cost of the sprayings. The result of the spraying experiment cannot therefore be regarded as decisive. But the experiment is not devoid of promise, and will be repeated next year.

33. The Farm continued to supply seed potatoes during the year. In all 23¾ maunds of seed tubers were supplied to cultivators in the Khasi Hills, and 23½ maunds to officials in other parts of the province. In former years, the seed potatoes given to Khasia cultivators were supplied free of cost, but a steady demand for farm seed having arisen, the seed given out last season was charged for at a moderate price. The

continued distribution of seed potatoes by Government for several years past has resulted in the old inferior Khasia stock being gradually superseded by the improved varieties introduced by Government. It is believed in a few years the Khasia variety will have altogether disappeared from cultivation. The Farm may justly claim to have contributed to this result.

34. *Maize.*—The result of cultivation of various fodder crops in previous years was to show that maize or Indian-corn was the most useful and economical fodder that could be grown in these hills. Increasing attention has accordingly been paid to its cultivation at the Farm. Last year (1903), the total area cropped with Indian-corn was $2\frac{3}{4}$ acres. A part of the crop was allowed to ripen, and after the cobs had been gathered, the stalks and leaves were chopped up and ensiled. The cobs, when shelled, gave 22 maunds of grain. The rest of the maize crop was cut in the green state, and the whole of it—cob, stalk, and leaf—was chopped up and put into the silo. The latter made the best silage. The total outturn of the crop from $2\frac{3}{4}$ acres was 433 loads of fodder and 22 maunds of corn. The total cost of cultivation amounted to Rs. 84-8-3; deducting the value of the 22 maunds of corn at Rs. 2-8 per maund, the 433 loads of fodder cost only Rs. 29-8-3, or at the rate of $14\frac{1}{2}$ loads per rupee, which is considered cheap. During the present year, a little over 5 acres has been laid under maize.

35. *Flax.*—Flax has been tried at the Farm in several years but without much success. It has usually been sown in the spring, so as to ripen in July. A trial will be made of autumn sowing. Stray plants of flax have been found to grow all through the winter in spite of the frosts. There is thus some ground for thinking that by sowing the crop in autumn it may grow and ripen in dry weather and escape the baneful influence of the monsoon rains.

36. *Silos.*—The experiment in making silage was continued last year with satisfactory result. There were four silos, two of which were pits and the other two were overground structures made of planks. The two pit silos were filled with jungle grass One of the two overground silos was filled with green maize, the whole plant—stalk, leaves, and cob—being used, and the other with maize stalks and leaves after the cobs had ripened and been gathered. In every case the fodder was chopped up with a chaff cutter. In all, there were stored about 700 loads of fodder, out of which about 600 loads were found to be in good condition when the silos were opened in winter. The silage prepared from green maize turned out to be the best in point of quality, but it is doubtful whether it would be as economical as maize ensiled without the cobs. The 600 loads of silage cost about Rs. 139, including part cost of constructing the silos, which are expected to last for several years, and the cost of cultivation of the maize and of collecting the wild grass. Each load of silage weighed on the average three quarters of a maund, and thus cost 3 annas 9 pies, which is considered very cheap, a load of green grass at Shillong during the winter costing three to four times that sum. The silage proved exceedingly useful in feeding the Farm cattle which would have fared badly without it.

37. It is a matter of satisfaction to be able to report that the example of the Experimental Farm in the matter of preserving fodder in silos was followed last year by a number of Khasia cultivators in the neighbouring villages of Mawklot and Nongpiiur. Five pit silos were made in these two villages and filled with maize stalks and leaves, the cobs being taken off for grain. The silos were small in size, and the loss through rottage on the sides was unduly large, but the owners are satisfied with the result, and are said to be contemplating larger and better silos this year. Two prizes of Rs. 40 and Rs. 20 have been offered for the two best silos made by Khasias during the current year.

38. *Fruit trees.*—The nursery of fruit trees at the Farm was maintained during the year. A number of successful grafts were made on pear, apple, and plum stocks. There are two old apple trees and a plantation of Spanish chestnut, a legacy from the old Model Farm, which existed some 30 years ago. These trees, which had suffered greatly from neglect, have been taken in hand and are now in a flourishing condition. Nothing can be said as yet about the success of the Spanish chestnut in the climate of Shillong. Some of the trees flowered last year and gave a small crop of nuts, but most of the fruit was shrivelled and useless. Most of the trees are bearing this year, but the quality of the fruit is as yet uncertain. The two apple trees have borne abundant crops of fruit for many years past, but the fruit was generally found to be damaged by a grub, and so partly but not wholly spoiled. To remedy this, the trees were cleaned and pruned last winter, and in April last they were sprayed over twice with Bordeaux mixture and Paris green as a preventive of insect pest. But the spraying does not appear to have proved effective against the insects.

39. A small plantation of fruit trees imported from England was established at the Farm during the year. An account of this plantation will be found under the Fruit Garden, of which it really forms a part. But there is some reason to believe that the site chosen at the Farm for fruit trees is more suitable than the Fruit Garden itself, and more fruit trees will accordingly be transferred to the Farm.

40. *The Farm Cattle.*—On the 30th June 1904, the herd consisted of one Patna bull, 9 Patna cows, 10 Patna calves and young stock, 2 Bhutia cows, 14 Khasia cows, 15 Khasia calves and heifers, and 12 calves which are the progeny of Khasia and Bhutia cows by the Patna bull, in all 63 head of cattle, against 53 on the 31st March 1903. Thirteen head of cattle—mostly old Khasia cows and male calves—were disposed of by sale during the period under report, fetching a price of Rs. 103-2 There were no losses through death, except two calves, which died shortly after birth. In June last there was an outbreak of foot-and-mouth disease, but it caused no loss, and was soon cured.

41. *Pigs.*—The four English pigs—one boar and three sows—imported in December 1902 have continued to do well. The three sows have produced three litters each, in all 66 young ones. One of these was stolen at night and one died by accident. Out of the remaining 64 young pigs, 34 were sold, mostly to Khasias for breeding purposes, at an aggregate price of Rs. 202. The total cost of maintaining the pigs, inclusive of the wages of a swineherd, during the 15 months under report amounted to Rs. 516-5-2, and the total receipts from the sale of young pigs to Rs. 202. The Khasias took a great fancy to the English pigs. Some have used the young English boars for crossing with Khasia sows. The progeny of the cross are reported to be an improvement on the native stock. Latterly, the demand for the English pigs has fallen off. It is said they require more food than the people generally can afford, and being of more active habits, they require to be constantly looked after. It is a pity the Khasias cannot realize the truth of the maxim that nothing good can be attained without taking some trouble. The Khasia allows his pigs to wander about and feed on garbage of all sorts, and he fails to see the superior points of the English stock.

42. A bulletin was recently published by the Department, embodying the results obtained at the Experimental Farm. These related to the use of the improved varieties of potatoes, the use of oil-cake as a manure, the use and construction of silos, and the introduction of English pigs. The bulletin has been translated into the Khasia language, and is being circulated free of cost in the Khasi and Jaintia Hills. The want of a periodic journal with regular readers is felt when it becomes a question of circulating these educative pamphlets. The bulletin was sent to the Khasia local papers for publication.

43. *Bee-rearing.*—The Khasi Hills are one of the few places in India where apiculture is systematically practised. The method of rearing followed is, however, a crude one,—not unlike the old system of rearing bees in skeps practised in England. Scientific methods, *e.g.*, the use of the bar-frame hive, are as yet unknown. It is intended to give these new methods a trial at the Farm. A beginning was made last year, but it is too early yet to speak of the result. With a subject like bees, about which so little is known in India, many failures must be faced before a definite result can be hoped for.

44. *Expenditure and income of the Farm.*—The following statement shows the expenditure of the Farm during 1903-1904, and the first quarter of the current year, which is covered by this report :—

	1903-1904.	First quarter of 1904-1905.	Total.
	Rs. a. p.	Rs. a. p.	Rs. a. p.
Establishment	520 4 0	192 0 0	712 4 0
Wages of extra labour ...	531 10 8	189 9 4	721 4 0
Seeds	22 6 6	6 3 0	28 9 6
Appliances	43 9 0	...	43 9 0
Manure	57 4 0	...	57 4 0
Cowsheds and pigsty	72 12 0	2 14 8	75 10 8
Food for cattle	689 14 4	412 7 5	1,102 5 9
Food for pigs	277 0 2	89 15 0	366 15 2
Silos	144 6 0	...	144 6 0
Miscellaneous	37 7 3	38 0 0	75 7 3
Total	2,396 9 11	931 1 5	3,327 11 4

Out of the total expenditure, Rs. 180-0-5 was met from the dairy fund, and the rest was obtained from Government grants for 1903-1904 and the current year.

The income of the Farm amounted to Rs. 1,053-2-8 during 1903-1904, and Rs. 207-10-6 during the first quarter of the current year.

45. *The Government Dairy at Shillong.*—The dairy was leased on the 1st April 1903 to Mrs. Fenton, and continues to be under her management. But the concern still belongs to Government, and is inspected and supervised by this department. Mrs. Fenton pays a monthly rent of Rs. 45. The rent, which is now the sole income of Government from the dairy, amounted to Rs. 675 during the 15 months under report, and the expenditure to Rs. 217-4-3, mostly in the purchase of new machinery. The dairy has brought in considerable profit to Government, besides proving a boon to the residents of Shillong and the province generally. Large quantities of butter are sent out by post in tins. The only pecuniary assistance received from Government was a grant of Rs. 500 in July 1900. Since then the Dairy has contributed no less a sum than Rs. 2,657-1-9 towards the purchase of live-stock and various other undertakings for which this Department received no direct assistance from Government, and on the 30th June 1904, the Dairy fund had a balance of Rs. 1,381 at its credit, besides machinery and appliances valued originally at Rs. 1,190.

A private Dairy started at Shillong in January 1903 continues to exist, and is believed to be doing well.

46. *The experimental Fruit Garden.*—The object of the fruit garden was described in the last annual report. It is to experiment with various kinds of fruit trees grown in the temperate climate of Europe, with a view to introducing such of them as may succeed in the hill districts, which possess a temperate or semi-temperate climate not unlike that of the warmer regions of Europe. The various kinds of fruits under trial at the garden are as follows:—Pear, apple, cherry, fig, plum, peach, apricot, almond, Natal orange, Spanish chestnut, walnut, grapes, strawberry, raspberry, gooseberry, currant, loquat, cherimoyer, mountain papaya, and tree tomato. Besides these, rhubarb and cape gooseberry are being cultivated, and both very successfully. The garden has been planted with various kinds of mulberry, mainly intended for the feeding of silkworms. There is also a small nursery of hardy indigenous stocks intended for grafting with the superior imported varieties. These include pear, apple, cherry, grape, and plum.

Some of the fruit trees at the Fruit Garden did well, but others drooped, whereas some trees planted at Upper Shillong appeared to thrive better. This might be due to the greater elevation of the latter place, but another cause was suspected, *viz.*, that the trees must receive shelter from the prevailing wind of the spring months. This does not affect the fig trees and some others, but the majority were moved from their old situation either to a more sheltered field in the Fruit Garden or to Upper Shillong, and in both cases were given a north-east or sheltered aspect. It is probable that the diminished sunshine will be compensated by the shelter from wind.

The trees have been removed since the close of the period under report. The fig and peach trees appeared to be doing well where they had been originally planted. These, as well as chestnut and a few plants of apple, pear, plum, and cherry, were left in their old places.

47. It is too early yet to speak of the success or otherwise of fruit cultivation. The progress made by each species of trees tried is briefly stated below. The English pear trees have not made much growth, but those obtained from the Saharanpur Botanical Garden are thriving. Apple trees flourished. Most of the new wood was formed during the autumn. A few trees flowered, and two of them set fruit. The cherry, plum, and apricot trees are fairly healthy. These trees, as well as the raspberry and chestnut plants, were ravaged by beetles in May and June both years. The plants were greatly thrown back in consequence. These beetles are the enemies of every gardener in and near Shillong, and they are difficult to combat. They feed at night. The peach trees have grown very well, and several of these bore a few fruits each during the past season. Some of the fruits rotted on the trees and some were destroyed by insects, and a few ripened about the end of July. These belonged to three kinds, known as the Early Silver, Early Rivers, and Royal George. The first two have a light smooth skin, and are probably nectarines.

48. The fig trees have made very good growth, and many of them have borne fruit. Recently they have been injured by borers. Ripe fruits were obtained in June and July from the following varieties—Ronde Violette de hative, Pingo de mel, Brunswick, and Brown Turkey. The almond trees have made good growth, so also the loquats. The six grape vines obtained from England were badly damaged by a bear in July 1903, but they have grown again, and it is expected they will bear next year. A variety of red grapes of unknown origin—probably muscatel—have been found to

thrive and fruit well at Shillong. A large number of plants of this variety have been planted at the Farm and the Fruit Garden. A large number of grape cuttings was obtained last winter from Kashmir. These were planted in a nursery. The plants are yet too young for transplanting.

49. Among the small fruits under trial, the one most markedly successful is the strawberry. A small plot of land planted in October 1902 gave abundant fruit in June and July 1904. No doubt, the weather was exceptionally favourable, those two months being exceptionally dry. But apart from this, strawberries are known to ripen in Shillong. One kind, of which a plant was obtained from the Neilgherries, to which it was indigenous, is worthy of note. It has a small conical fruit, and bears abundantly during the greater part of the year. The gooseberry is the least successful of all the fruit trees and has made no growth. Currants, too, have not done well, though the plants look healthy. Many of the bushes suffered from a fungoid disease, which caused the old wood to die back, and thus retarded growth. The raspberry plants came on well in the spring, and some of them bore fruit, but the bushes were badly injured by beetles in May and June, and are now languishing.

50. The Victoria Mammoth orange plants obtained from Natal two years ago did not thrive at the fruit garden. The climate of Shillong was too cold for them. They have been removed to the tropical plantation near Therriaghat, and are growing well at that place.

51. Expenditure on the Fruit Garden during the period under report is shown below :—

	1903-1904.	First quarter of 1904-1905.	Total for the 15 months.
	Rs. a. p.	Rs. a. p.	Rs. a. p.
Establishment	564 0 0	141 0 0	705 0 0
Construction of new houses ...	251 0 0	...	251 0 0
Repairs to houses	48 4 10	38 7 0	86 11 10
Furniture	3 8 0	...	3 8 0
Tools	19 15 2	8 10 0	28 9 2
Fencing, roads, and lawn ...	282 1 2	0 6 0	282 7 2
Manure	139 8 10	...	139 8 10
Plants and seeds	121 14 7	...	121 14 7
Bee-keeping	66 6 0	...	66 6 0
Wages of labour for cultivation ...	361 6 8	157 8 0	518 14 8
Contingencies	57 12 1	3 12 6	61 8 7
Total	1,915 13 4	349 11 6	2,265 8 10

Receipts amounted to Rs. 19-3-6 only during the 15 months.

Tropical plantation.

52. With a view to experiment in certain tropical products, for the study of which the Assistant Director visited Madras and Ceylon in the autumn of 1903, a plantation was started on the southern slopes of the Khasi Hills, near the Cherrapunji-Theria bridle path. The place is on a ridge about 7½ miles from Cherrapunji and at an elevation of about 1,200 feet. Work was started there about the beginning of January last, when I visited the place in company with the Assistant Director, by whom the site was selected. Four blocks of land with an aggregate area of about 12 acres, lying on the top and slopes of a ridge, have been cleared of forest and burnt. Water has been brought to the place from a stream about a mile away at a cost of Rs. 164. The necessary quarters for the staff, which includes a Superintendent on Rs. 30 per mensem and two Khasia malis on Rs. 12 each per mensem, and a plant-shed, were built at a cost of Rs. 375. A bridle path leading from the Cherra-Theria road to the top of the ridge has been completed, and a number of footpaths laid out at a cost of Rs. 200. It is proposed to try a large number of tropical plants, the most important among these being cocoa, the greater and lesser cardamom, cinnamon, nutmeg, clove, camphor, citronella, lemon grass, and arrowroot. Some of these have been already planted, and so far they are doing well. Various tropical fruit trees also have been procured for trial and planted. These include grafted mango, litchi, sapota, persimon, loquat, Natal orange, cherimoyer, tree tomato, a superior variety of papaya from Bangalore, bread fruit, soursop, durian, Kew and Ceylon pine-apples, and a number of other fruits.

The expenditure sanctioned for the year 1903-1904 was Rs. 1,500. Under reclamation and cultivation the estimate of cost was Rs. 530, more than half of which was saved, and there were savings also under establishment, roads, seed, and buildings. In all, about Rs. 990 was spent up to the close of the last financial year. During the first quarter of the current year which is included in this report, the total expenditure amounted to Rs. 686-14-5, out of the total grant for the year of Rs. 2,300.

Seed distribution.

53. The American cotton tried last year proved practically a failure in all the various places in Assam where it was tried. A small measure of success was reported from a place called Raliang in the Khasi and Jaintia Hills, but the local cultivators there said that the American cotton required too much trouble and attention to be worth their while to take it up.

There are many difficulties to contend with in these experiments. Communication is slow and difficult, making it impossible for the officers of this Department to give individual attention to each one. Intelligence and education are not sufficiently diffused to enable cultivators to find a market and demand a fair price when they have succeeded in raising a superior quality. Assam cotton, as is well known, is almost if not quite the worst that finds its way to the market, and it would take long before the benefit of producing a better class began to filter down to the cultivators, who are for the most part hillmen in very backward localities. Still the experiment should be persevered with, and some more seed has been asked for. I do not recommened trying again a high-class American exotic variety. It would be better to try with some fair quality Indian cottons. The efforts of this Department should be directed chiefly to (*a*) superintendence by visiting the scene of experiments, (*b*) encouraging the cultivators by de monstrating that the improved cotton obtains a better price.

Bansmati rice.

54. Two maunds of seed of Bansmati rice were obtained from the Burdwan Experimental Farm in Bengal and given to two native gentlemen, Babu Syama Charan Maitra and Srijut Bhabani Charan Sarma, both of Tezpur, for experimental cultivation during the last season. The variety is reported to be of very fine quality, and has a delicate aroma. It belongs to the *lahi* sub-class of *sali* rice. Babu Syama Charan Maitra planted a little over 8 *bighas* with seedlings raised from 38 seers of seed and obtained an outturn of 62 maunds of paddy, equivalent to an outturn of 1,870lbs. of husked rice per acre. Srijut Bhabani Charan Sarma planted four *bighas* and used 25 seers of seed ; his outturn amounted to 24½ maunds, equal to 1,576 lbs. per acre. These yields, particularly the former, compare favourably with the accepted standard outturn of *lahi* rice in the Darrang district, which is 1,000 lbs. of cleaned rice or 1,613 lbs. of paddy per acre. Both gentlemen have been requested to continue the cultivation in the ensuing season, and arrangements have also been made to have the variety tried at two other places in the Assam Valley. A sample of rice sent for inspection by Babu Syama Charan Maitra appeared to be quite equal to the rice known as table rice.

Jute cultivation in Sibsagar.

55. At the instance of the Deputy Commissioner of Sibsagar, one maund of jute seed was furnished to the mauzadar of Silakuti in that district for experimental cultivation. The seed was distributed in small quantities among 45 raiyats of the mauza. The aggregate area sown was about 41 *bighas*, and the yield was about 105 maunds. Many of the raiyats who received seed neglected the cultivation and got poor results, but a few got a fairly good crop, amounting to about 15 maunds of jute per acre, which is the accepted average outturn of the fibre in the jute-growing districts of Bengal. The price obtained for the produce was Rs. 4 to Rs. 5 per maund, which, considering that there is as yet no trade in the article in Upper Assam, is a good price. This experiment as well as past experience shows that jute can be profitably grown in Upper Assam, and its cultivation deserves encouragement as an additional source of income to the raiyats. The only obstacle in the way is the natural lethargy of the people. In Lower Assam, jute is growing in popular favour, and its cultivation is spreading.

Experimental cultivation of wheat.

56. A number of experiments were made last year in the cultivation of wheat in different parts of the province. Results were specially reported for the information of the Military Department which had desired assistance in encouraging the cultivation of wheat in the Manipur valley and in the neighbourhood of Silchar and Dibrugarh. These are (or were—Silchar has troops no longer) garrison stations, and the importation of wheat for *atta*-eating regiments proves a heavy item of expense. Arrangements were accordingly made for experiments at these places. Experiments were also made in a few selected localities in Kamrup, Nowgong, and the Naga Hills. The seed wheat was obtained from Bengal, and in all 7¼ maunds were distributed for experiment. In Manipur one of the four experiments made gave a very successful result, the yield being no less than 2,140 lbs. of grain to the acre. In the remaining three experiments the crops were greatly damaged by continuous rain and hailstorms, also in some cases by cattle. The yields obtained in the Naga Hills are not known, but the reports of the experimenting officers tend to show the suitability of that district for wheat. In Nowgong, two out of the three experi-

ments made were attended with a fair measure of success. In Kamrup most of the experiments were made in Barpeta, but they were not properly managed, and no very definite conclusions can be drawn from the reported results. At Silchar and Dibrugarh, the experiments failed altogether. Both of these are very humid places, and it is not likely that wheat will succeed there. Arrangements are being made to have further experiments in wheat made in Kamrup and the Naga Hills during the ensuing cold season. Some experiments were made with barley and oats in the Naga Hills along with those in wheat. The results of these experiments are not definitely known. The crops, particularly oats, are reported to have grown well. To summarise the foregoing, wheat will undoubtedly thrive and give a good yield in Manipur; it promises well in the Naga Hills, but the people need to be educated to appreciate and tend the unaccustomed crop. The same remark applies to Nowgong and Kamrup, and there is a fair prospect of success with wheat in these two districts.

Terraced rice cultivation in the Naga Hills.

57. For an experiment in the cultivation of irrigated rice in the Ao country in the Naga Hills, Major Howell had a piece of land terraced under the large Ao village of Nankam and retained two Angamis (the Angamis understand and practice irrigation) till the end of the year to supervise. Water was brought on to the terraces and they were planted with three varieties of Angami rice. All three succeeded well, and a very good harvest was reaped in November last. Sanction of the Chief Commissioner was obtained in May last to an expenditure of Rs. 300 for introducing the practice of terraced rice cultivation into the country of the Semas. The result will be reported hereafter.

Natal oranges.

58. Mention was made in last year's report of a variety of orange imported from Natal for the fruit garden at Shillong. The plants arrived in November 1902. A few of them were planted at the Fruit Garden and were subsequently transferred to the Tropical Plantation at Wahjain. The remaining plants, 16 in number, were distributed to the following persons for trial :—3 each to Mr. E. G. Wilde of Bamgaon, Tezpur, and Babu Syam Lal Chaudhuri, tahsildar of Palasbari, 2 to Babu Syama Charan Maitra of Tezpur, and 8 to a Wahdadar of Shella in the Khasi Hills. Most of the plants are reported to have made good growth. The variety is of large size and seedless, and is known as the Victoria Mammoth. The plants at the Tropical Plantation in particular are very healthy, as indeed might have been anticipated in that famous orange-growing locality.

Fruit trees distributed at Shillong.

59. Three hundred and thirty-five young trees, mostly grafts, were procured by this department from the Saharanpur Botanical Garden at the instance of a number of residents of Shillong who themselves bore the expense. The trees were of 11 different kinds, namely, grape-vine, plum, apricot, nectarine, apple, Cabul pomegranate, quince, Kagzi lime, Malta lemon, walnut, and dewberry. The plants were received in good condition, and planted out by the recipients in their own gardens in the cold weather of 1902-1903. The reports to hand show that about 25 per cent. of the plants have failed. Some (the plum, apricot, nectarine, apple, grape-vine, and dewberry plants) have made excellent growth, and it is to be expected they will succeed.

The Flower Show.

60. A new departure of the year was an Agri-Horticultural Exhibition (to which was added an exhibition of Assam silk, jewellery, ivory carving and some other artistic products of the province) held at Shillong on 13th June under the auspices of this Department. It proved remarkably successful. Primarily intended for Khasias, all classes of the community took an unbounded interest in the Show. Prizes were offered by private individuals; exhibits of flowers, fruit and vegetables poured in, and the public—Europeans, Khasias, Bengalis, and Hindustanis alike—thronged the exhibition from noon (when it opened) till dusk, not being in the least deterred by an entrance fee of 4 annas, which was imposed between 4 and 5-30 p.m. Over 240 people purchased tickets. The silks and jewellery were no doubt a great attraction. Many of these things were lent by Assamese gentlemen. Others were for sale, and sales of a value of over Rs. 500 were effected. The site of the exhibition was the lawn outside the Secretariat buildings. Here temporary sheds were erected in the form of a quadrangle. Two rooms in the office buildings were also used. The vegetables produced were various and good, and there were also dairy products, honey and fruit. The day was fortunately free from rain, but on another occasion it would be safer to fix an earlier date, say 15th May, as the monsoon in these hills is liable to set in quite early in June. Flowers are at their best in May and all kinds of vegetables, including even potatoes, are forthcoming then.

Sericultural experiments.

61. Following upon my deputation to Kashmir in 1903, an experiment was made in Shillong and Kohima in rearing silkworms after the method followed in Kashmir, *i.e.*, by importing in the autumn from France, the seed of the European univoltine moth. The seed hatches out in the spring, but it would not survive unless hibernated in the hills, where there is frost. The seed is microscopically examined before despatch from Europe, and this insures freedom from disease.

The experiment was made with 4 ounces of seed, *viz.*, 2 ounces in Shillong and 2 in Kohima. The worms feed on mulberry leaf, of which a sufficient quantity was forth-coming in both places,—but it was none too much, and before silk rearing can be practised on a large scale more mulberry must be grown.

In spite of certain drawbacks, the experiment may be described as entirely successful, and, as opening out a new source of wealth to the Khasias, if they will but take advantage of it. The chief of the drawbacks alluded to was the omission to dry the cocoons effectually, a process which in Kashmir is done artificially in a "sechoir" or sort of huge oven. For want of this drying, the cocoons mildewed before reaching the experts to whom they were submitted, but this did not prevent their being valued. M. L. de l'Arbousset (a silk expert of Alais, France); Mr. C. A. Dubus, Secretary, Bengal Silk Committee, and Mr. C. B. Walton, of Kashmir, agreed in pronouncing the silk of fine quality. M. de l'Arbousset valued the cocoons (assuming they were properly dried) at about Rs. 80 per maund. The outturn both in weight and number of cocoons was satisfactory. As manufacturers will always buy cocoons, there is no need for the rearer to reel them in order to obtain a profit. Reeling also can be done by hand, and there is nothing to prevent a family in these hills having its little grove of mulberries and rearing each year cocoons either to be reeled in a hand machine or sold to a central agency, which would have a drier if not a filature. Silk rearing is essentially a cottage industry, as women and children can attend to most, if not all, the operations necessary, and by rearing the worms in small batches the danger of epidemic disease is averted.

CHAPTER VI.

MISCELLANEOUS.

Collections of economic products.

62. During the period under report, botanical and economic specimens of 25 different plants and of corundum were supplied to the Reporter on Economic Products. Besides these, the Agricultural Chemist to the Government of India was supplied at his own request with samples of Cassava root and of the principal oil-seeds,—mustard, linseed, and radish,—grown in the province.

63. *Naya Cinnamon.*—In order to teach the people of the Naga Hills how to remove and prepare the bark of wild cinnamon, which is common in those hills, a Khasia accustomed to the work as practised in the Khasi Hills, was sent to Kohima by this Department at the instance of Major Howell. The man was employed there from September to December 1903. He incidentally discovered the wild cardamon growing in the Naga Hills. Specimens of the cinnamon bark prepared by him were sent to the Reporter on Economic Products to the Government of India for valuation. It was considered somewhat too thick, but still was valued at Calcutta at Rs. 7 per maund. The Reporter said that bark of half the thickness would fetch about thrice as much.

The Deputy Commissioner has since reported that a Calcutta firm had addressed him on the subject of sending an agent to purchase cardamom and cinnamon.

64. *Wild Cardamom.*—A sample of wild cardamom growing in the Naga Hills was forwarded last year to the Reporter on Economic Products to the Government of India. He identified it as *Amomum subulatum*, the plant which furnishes the greater cardamom of commerce. The Darjeeling Hills are at present the chief source of supply of this product. The retail price of the article at Calcutta varies from Rs. 40 to Rs. 50 per maund. The sample from the Naga Hills was judged by experts as rather bitter, which, however, might have been due to want of the proper treatment usual, before putting on the market. At present the wild cardamom of the Naga Hills is put to no use, and the Nagas are quite ignorant of their value.

Supply of seeds and other products to correspondents.

65. Numerous requisitions for seed and other products, from both official and non-official correspondents, were met during the period under report. The list of articles supplied included seed of pulses, orange, cinchona, coffee, and the Khasia cherry (*prunus nepaulensis*), cuttings of the variety of peas grown at Shillong, and orange plants.

Bulletins issued.

66. The only bulletin issued by this Department during the period is the Shillong Government Farm Bulletin No. 1. It deals with some of the results obtained at the Experimental Farm at Upper Shillong. It was issued primarily for the benefit of the cultivators in the Khasi and Jaintia Hills. A second bulletin has issued since the close of the year on the cultivation of rhubarb, a European plant found to thrive very well in the Khasi Hills.

Cotton gins.

67. Five cotton gins were obtained by the Deputy Commissioner of the Naga Hills from the Baptist Mission at Tura. The Angamis liked the gins, but thought they were inconvenient for use by the women. An attempt is being made to have their use taught among the Aos and Lhotas, for whom they were primarily intended. The Director of the Department of Land Records and Agriculture, Bengal, also asked for six specimens of the Tura cotton gin, and these were accordingly sent.

Breeding bulls.

68. Exclusive of the Patna bull in the Government Farm at Upper Shillong, there are five Government breeding bulls in the province, *viz.*, at Silchar, Haflong, Shillong, Nahorjan tea estate in Sibsagar, and Gelahating tea estate in Darrang. The bull at Haflong was allowed to roam freely among herds of cattle grazing in the field, but as a sire it has proved unsuccessful. At Silchar, the results of covering were not reported by the people whose cows were served by the bull. At Shillong, the Kosi bull served 27 cows. Of these, 19 were productive. The bull in charge of Mr. Brown of the Gelahing tea estate in Darrang has been reported unfit for breeding purposes, and steps are being taken to dispose of it. No report on the work done by the Nahorjan bull has come to hand. The expenditure incurred for feed and keep of these bulls amounted to Rs. 906-3-5.

It has hitherto been the practice of this Department to import breeding bulls from other parts of India for the improvement of Assam cattle. Some of the imported bulls have failed as sires, and although a few have proved more or less useful, the improvement attributable to them is almost inappreciable. The Government of India have suggested that, instead of importing foreign bulls, which generally prove unsuitable for local cattle, it would be better to rear bulls of local breeds in special rearing depôts. A scheme for the establishment of a combined breeding and rearing depôt was submitted with this Department's letter No. 2252, dated the 23rd June 1904, to the Local Administration.

Cattle disease.

69. The statement in Appendix F shows the number of deaths among cattle reported from the several districts of the province during the 15 months under report, and the causes to which they are attributed. As compared with the average of the preceding two years (1901-1903) there was a decrease in every district, except Cachar, Darrang, and the Garo Hills. In Darrang cattle disease broke out in a virulent form and caused a heavy loss of cattle in many mauzas of the Mangaldai subdivision. In Nowgong cattle disease prevailed almost throughout the year, but in mild form, and deaths were not so numerous as in the preceding year. There were sporadic cases in Sibsagar also. In the Naga Hills there was a bad outbreak of foot-and-mouth disease during the rains affecting Kohima and the villages near the cart-road, but figures showing the actual mortality in this district are not available.

Rinderpest inoculation.

70. In February 1904, the Civil Veterinary Department deputed Captain Holmes to Assam to conduct at Moriani experiments to ascertain the dose needed for rinderpest inoculation with the various breeds of Assam cattle. Owing to an unfortunate hitch, the arrangements were somewhat delayed, and as the time of Captain Holmes was very limited, he was obliged to abandon the operations before any results of value could be obtained.

Veterinary Inspector.

71. In December 1903, the appointment of a Veterinary Inspector under this Department on a salary of Rs. 75—10—125 per mensem was sanctioned by the Chief Commissioner. Application was made to the Inspector General, Civil Veterinary Department, for a qualified candidate, but the pay (which was fixed at his suggestion) was found to be insufficient. Sanction has, therefore, been asked to an increased rate of pay. There is at present only one district in the province, Sibsagar, where veterinary assistance is given and that at the cost of local funds.

The appointment of a veterinary staff under this Department is certainly much wanted, especially when rinderpest and other forms of epidemic disease break out in the districts. The Veterinary Surgeon entertained by the Sibsagar Local Boards cannot always be spared to meet the demands of other districts. Besides which, the Boards may reasonably require the officer whom they pay to work only for them.

CHAPTER VII.

FINANCIAL.

72. The expenditure incurred by the Department during the 15 months ending the 30th June 1904 was Rs. 4,46,541, as detailed below :— Expenditure.

	Rs.	a.	p.
Superintendence, including rain gauge charges, veterinary charges, experimental cultivation and cost of economic collection.	75,291	12	3
Settlement	1,30,443	3	2
Survey detachment (exclusive of Rs. 22,716-9-10 debitable to Imperial)	21,666	15	0
Survey schools	2,257	14	5
Kanungo establishment	2,10,331	10	6
Registration of trade	6,549	12	8
Total	4,46,541	4	0

Compared with the average of the preceding two years, there has been an increase of nearly Rs. 97,000 in the average annual expenditure. The increase mainly occurred under the heads "Superintendence", and "Settlements." The following items contributed to the increase :—

(1) *Salaries.*—In the previous year, when Mr. Allen acted for six months, there was less expenditure under this head.

(2) *Travelling allowance of officers.*—Two deputations, *viz.*, of myself to Kashmir and of the Rai Bahadur to Ceylon and Southern India, caused the extra expenditure.

(3) The (new) entertainment of an elephant establishment.

(4) Purchase of tents.

(5) Charges on account of payments of honoraria to the non-official members of the Sibsagar embankment committee.

(6) The expenditure in connection with Mr. Basu's enquiry in the Nambor forests.

(7) A charge of nearly Rs. 1,800 on account of conveyance of the original cadastral maps transferred from the Map Records and Issue Office to the Secretariat Record Rooms.

(8) The retention of the Kamrup and Sibsagar settlement establishments throughout the whole period, whereas these establishments were entertained for four months only in 1902-1903.

There has also been an increase under the head "Kanungo establishment," which is accounted for by the increase in the number of mandals and patwaris in the second grade and the grant of the field allowance to supervisor kanungos and special rewards to mandals and patwaris for exceptionally good work.

Shillong,

The 7th September 1904.

F. C. HENNIKER,

Director, Department of Land Records and Agriculture, Assam.

APPENDICES.

APPENDIX A.

Statement showing the number of mandals and patwaris in each subdivision and the number in charg of their home circles.

Subdivision.	Total number of mandals or patwaris in		Number whose homes are in the circle.		Number whose homes are outside the circle.	
	1902-1903.	1903-1904.	1902-1903.	1903-1904.	1902-1903.	1903-1904.
1	2	3	4	5	6	7
Hailakandi	29	29	4	5	25	24
Silchar	68	68	12	12	56	56
Jaintia (North Sylhet)	46	46	4	4	42	42
Pratabgarh	10	10*	...	...	...	...
Dhubri	33	33	3	3	30	30
Barpeta	70	70	11	26	59	44
Gauhati	230†	231†	57	88	173	143
Mangaldai	85	85	10	11	75	74
Tezpur	56	56	19	18	37	38
Nowgong	168	168	35	37	133	131
Golaghat	56	56	17	19	39	37
Jorhat	77	77	11	22	66	55
Sibsagar sadr	71	72	19	19	52	53
North Lakhimpur	33	33	11	11	22	22‡
Dibrugarh	75	76	30	30	45	46
Total	1,107	1,110	243	305	854	795

* Information as to their home circles, etc., not furnished.

† Including five mandals paid by mauzadar of Beltola.

‡ Houses of eight mandals are very close to their circles.

APPEN

Work Statement of Sub-Deputy Collectors

Subdivision.	Name of Sub-Deputy Collector.	Total number of days in charge.	Total number of days on tour.	Number of mandals or patwaris in circle.
1	2	3	4	5
Hailakandi ...	Maulvi Muhammed Sadir ...	231	81	29
	Babu Haris Chandra Sen, Hailakandi tahsil.	183	36	29
Silchar	Babu Purna Chandra Mitra ...	412	191	68
North Sylhet (Kanairghat).	Maulvi Tazamulali	453	173	16
North Sylhet (Goainghat).	„ Abdur Rahim	127	62	30
Dhubri	Babu Dwarkanath Chowdhury ..	224	53	33
	Maulvi Mafizar Rahaman ...	233	163	33
Barpeta	Babu Sarat Chandra Lahiri ...	457	161	44
	Srijut Ratnakanta Barua, Bajali tahsil.	457	126	22
Gauhati	Didaruddin Bora, Gauhati tahsil ...	223	134	18
	Srijut Hem Chandra Goswami, Gauhati tahsil.	234	98	18
	Srijut Janoki Nath Das, No. II ...	457	203	13
	Muhammed Haniff	457	169	37
	Babu Giris Chandra Nandi Mazumdar.	457	226	38
	Srijut Syam Lal Chowdhury, Palasbari tahsil.	457	189	23
	Srijut Kali Ram Medhi ...	79	27	...
	Saifuddin Ahmad, Baroma ...	244	154	18
	Babu Tarini Charan Nandi ...	148	64	20
	Srijut Kamal Chandra Kagti ...	249	189	23
	Babu Jagat Chandra Das, Nalbari	182	51	19
	„ Mohendra Kumar Dam ...	157	7	...
	„ Banga Chandra Chowdhury, Rangya tahsil.	381	176	45
	Maulvi Abdul Rahim ...	237	102	57
	Babu Ram Kumar Aditya (Tambulpur tahsil).	443	112	20

DIX B.

for the fifteen months ending the 30th June 1904.

Number of mandals or patwaris whose papers were checked.	Number of villages in circle.	Number of villages visited.	Total length of check lines run (linear mile).	Area in acres of concealed cultivation discovered.	Remarks.
6	7	8	9	10	11
29	267	29	...	...	
29	267	17	1·52	...	
68	753	296	0·45	...	45 days on privilege leave.
16	228	218	1·81	3·84	
28	320	47	...	3·00	
33	333	30	6·07	0·60	Transferred to North Lakhimpur.
31	333	38	17·81	5·90	For 32 days he was in the Survey Camp at Palasbari.
44	465	45	15·98	Nil	
13	113	18	1·99	...	
10	138	36	4·36	...	Joined on 21st November 1903.
15	138	27	2·63	...	Deputed to settlement office from 21st November 1903.
11	109	61	21·82	10·45	
24	244	76	5·62	...	
38	232	153	12·29	13·12	
14	131	54	26·71	4·11	
...	...	...	...	...	Engaged in re-settlement work.
18	79	50	15·00	2	He was on leave for 122 days during the year ending 31st March 1904.
...	165	33	...	...	Joined on 4th February 1904.
...	200	...	...	...	Joined on 26th October 1903, and engaged in resettlement work, hence he did not do any work of his circle.
3	143	35	1·62	...	Joined on 1st January 1904.
...	...	...	...	...	He was in sadr office from 11th May to 5th June and in settlement office from 6th June to 14th October 1903.
31	353	100	8·66	...	He was engaged in re-settlement work for 76 days.
42	375	80	5·14	...	The Sub-Deputy Collector was in this district up to 31st December 1903.
20	97	61	2·20	...	He was under suspension from 17th to 30th June 1904.

Subdivision.	Name of Sub-Deputy Collector.	Total number of days in charge.	Total number of days on tour.	Number of mandals or patwaris in circle.
1	2	3	4	5
Mangaldai ...	Babu Probhat Chandra Chatterji...	457	140	49
	Srijut Rama Kanta Barua, Mangaldai tahsil.	457	197	16
	Munshi Dedaruddin Bora, Patharughat tahsil.	230	47	20
	Maulvi Abrar Hossain, Patharughat tahsil.	148	48	...
Tezpur	Babu Mohendra Chandra De ...	55	18	56
	„ Bhola Nath Das ...	389	175	56
Nowgong ...	Babu Sris Kumar Sen ...	459	214	62 15(*d*) 125(*e*)
	Srijut Probodh Chandra Bordoloi...	213	70	64
	„ Gunahas Goswami, Raha tahsil.	457	275	23
	„ Bharat Chandra Das, Samaguri tahsil.	404	277	15
Golaghat ...	Srijut Benudhar Rajkhowa ...	197	54	56
	Babu Mohendra Kumar Dam ...	252	150	
Jorhat	Srijut Annada Charan Bhattacharya	317	131	61
	„ Probodh Chandra Bardoloi	171	111	61
	„ Bistu Ram Barua, Jorhat tahsil.	457	291	16
Sibsagar sadr ...	„ Laksheswar Sarma, Namtidal tahsil.	457	204	15
	Munshi Faizuddin Ahmed, Sibsagar tahsil.	457	270	16
	Maulvi Phukan Ali	457	185	72
Dibrugarh ...	Babu Janaki Nath Das, I ...	435	200	76
	Srijut Bholanath Das ...	59	26	...
North Lakhimpur ...	Maulvi Abrar Hussain ...	218	37	33
	Babu Dwaraka Nath Chowdhury...	223	122	33

DIX B—*concluded.*

Number of mandals or patwaris whose papers were checked.	Number of villages in circle.	Number of villages visited.	Total length of check lines run (linear miles).	Area in acres of concealed cultivation discovered.	Remarks.
6	7	8	9	10	11
49	570	85	1·44	...	
16	121	44	6·50	...	
20	144	9	...	...	Transferred to Kamrup.
18	...	40	0·41	...	Transferred from North Lakhimpur.
...	415	7	1·95(*a*)	...	From 1st April to 25th May 1903. (*a*) Run in the extension survey villages.
56	415	132	14·43(*b*)	2·22	From 8th June 1903 to 30th June 1904. (*b*) Run chiefly in the extension survey villages.
50	427 104(*c*) 945(*d*)	103	3·21(*e*)	5·62	(*c*) When in charge of Samaguri tahsil. (*d*) On the departure of Srijut Probodh Chandra Bardoloi, when only one officer was left at sadr. (*e*) Tested 590 acres of cadastral and 51 acres of non-cadastral land without check lines.
40	508	90	1·67	...	
23	102	36	6·35	...	
15	104	104	8·87	88·01	Was on privilege leave for 53 days.
26	367	61	...	...	
36		110	2·41	...	
61	464	180	...	...	
61	464	343	...	...	
...	146	1	...	...	
15	111	43	4	5·64	
16	142	51	9	36·69	
72	386	263	12·86	4·00	
52	822	151	14·75	37·00	
5	...	12	2·81	...	From 1st April 1903 to 29th May 1903.
*	260	30	*	*	* No records.
33	260	120	9·45	38·90	

APPENDIX C.

Statement showing the Condition of Survey Marks on the 30th June 1904.

No.	Classification.	Total number of marks.	Total number found in good order.	Number found not in good order.		Total (of columns 3 and 4) in good order on 1st July 1904.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
1	Trijunction prisms ...	14,772	12,928	318	226	13,246	1,300
2	Traverse stations shown by mounds and boughs ...	72,930	35,356	19,006	8,761	54,362	9,807
3	Kanungos' mounds, including jungle mounds ...	9,771	4,985	2,240	1,076	7,225	1,470
4	Country stones on theodolite stations	26,030	22,922	259	320	23,181	2,529
5	Prisms on boundaries of grants	7,362	6,950	58	79	7,008	275
6	Concrete blocks on boundaries of grants ...	16,307	14,572	163	170	14,735	1,402
7	Country stones on boundaries of grants ...	26,217	22,206	193	215	22,399	3,603
8	Mounds on ditto ...	3,932	2,207	512	581	2,719	632
9	Brick pillars on ditto ...	671	596	...	13	596	62
10	Iron posts	2	2	...	...	2	...
11	Brick pillars on town boundaries	21	21	...	...	21	...
	Total	178,015	122,745	22,749	11,441	145,494	21,080

APPENDIX D.

Statement showing the non-cadastral area surveyed and mapped during the fifteen months ending the 30th June 1904.

Name of subdivision or district.			Total settled non-cadastral area in acres.	Area surveyed and mapped in acres.	Area tested and passed as correct in acres.	Amount of rewards paid or due.		
1			2	3	4	5		
						Rs.	a.	p.
Goalpara	... Dhubri	... ...	5,219·73	620·87	620·87	29	5	6
Kamrup	... Barpeta	... ...	6,203·38	1,258·96	1,042·98	49	4	9
	Gauhati	... ...	13,089·44	79·06*	50·63	2	6	5
Darrang	... Mangaldai	... ...	35,853·44	111·01	...	...		
Nowgong	... ...	... ...	6,527·93	712·39	392·72	31	7	7
Lakhimpur	... Dibrugarh	... ...	72,525·62	1,188·42†	499·50	107	0	0
	North Lakhimpur	...	6,533·74	875·75	522·91	41	6	3
	Total	... ...	145,953·28	4,846·46	3,129·61	260	14	6

* 1,414 more *dags* have been surveyed, but area has not yet been calculated.

† Besides this, 1,062·48 acres were surveyed in boundary only.

APPENDIX E.

Current Progress Return of Resettlement for 1903-1904.

District.	Number of villages.				Office work (for villages dealt with in field during year preceding).			Field work during year under report.			Assessment.			Expenditure.		Incidence of expenditure per square mile of area.		
	Total in the district.		Taken up to the end of the year under report.		Number of villages to be dealt with in office.	Number of villages for which		Number of villages for which			Number of villages for which rates have been submitted.							
	Established.	Fluctuating.	Established.	Fluctuating.		Map failed.	Records failed.	Maps and records corrected.	Land classed.	Maps and records attested.	During the year.	Previously.	Total to end of year.	During year.	Total to end of year.	For which maps and records corrected.	Attested.	For which revenue rates submitted.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
														Rs.	Rs.			
Kamrup ...	1,325	837	1,325	86	812	111	*Nil*	38	697	773	115	...	115	61,362	74,109*	37·02	78·86	543·43
Sibsagar ...	1,388	228	1,384	...	633	45	...	751	691	752	155	...	155	67,386	82,086	55·58	102·40	460·79

* Includes Rs. 2,812 on account of price of instruments and Darbar tent.

APPENDIX F.

Statement showing the Number of Deaths among Cattle during 1901—1903 *and the* 15 *months ending* 30*th June* 1904.

District.	Rinderpest.		Foot-and-mouth disease.		Anthrax.		Other diseases.		Total.		Estimated value of cattle.	
	1901—1903.	1903-1904.	1901—1903.	1903-1904.	1901—1903.	1903-1904.	1901—1903.	1903-1904.	1901—1903.	1903-1904.	1901—1903.	1903-1904.
1	2		3		4		5		6		7	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Rs.	Rs.
Cachar ...	869	159	61	401	769	769	176	553	1,875	1,882	32,609	19,665
Sylhet ...	7,944	2,315	4,165	1,207	6,092	1,650	14,846	4,677	33,047	9,849	2,47,492	84,154
Goalpara ...	2,035	862	4,000	1,620	2,046	60	6,545	4,438	14,626	6,980	1,06,538	45,845
Kamrup ...	13,320	12,385	6,123	1,409	5,226	1,679	12,763	7,852	37,432	23,325	2,80,740	2,33,250
Darrang ...	6,645	12,764	2,097	2,410	1,315	1,236	4,742	4,563	14,799	20,973	1,30,991	1,71,726
Nowgong ...	51,62	5,431	4,526	2,637	1,646	1,037	3,306	...	14,640	9,105	1,17,120	91,050
Sibsagar ...	12,703	3,588	2,998	1,731	3,180	1,327	14,697	5,466	33,578	12,112	3,43,350	1,10,895
Lakhimpur ...	7,272	786	337	106	112	...	4,651	4,372	12,372	5,264	1,59,093	1,68,505
Naga Hills ...	(Not available.)											
Khasi and Jaintia Hills.	541	310	...	7	...	...	140	...	681	317	6,810	3,170
Garo Hills ...	1,651	1,064	321	539	506	397	1,349	1,483	3,827	3,483	33,712	31,331
Total ...	58,142	39,664	24,628	12,067	20,892	8,155	63,215	33,404	166,877	93,290	14,58,455	9,59,591

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REPORT

OF THE

DEPARTMENT OF
LAND RECORDS AND AGRICULTURE
ASSAM

FOR THE

Year ending the 30th June 1905.

BY

H. C. BARNES, I.C.S.,

OFFG., DIRECTOR OF THE DEPARTMENT.

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REPORT

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, ASSAM,

FOR THE YEAR ENDING

30th June 1905.

CHAPTER I.

INTRODUCTION.

The report.

This report deals with the period between the 1st July 1904 and the 30th June 1905.

Charge.

2. Mr. F. C. Henniker, I.C.S., was in charge of the Department from the beginning of year to April 4th: from the 5th April to the 30th June I officiated as Director. Rai B. C. Basu, Bahadur, B.A., M.R.A.C., M.R.A.S. (England), was Assistant to the Director throughout the period. He was on privilege leave from June 9th to the end of the year.

Mr. T. Shaw was the Superintendent of Provincial Surveys throughout the year. Mr. C. A. O'Donel was Sub-Assistant Superintendent of Surveys up to the 19th January 1905, but was on privilege leave from the 1st July to the 5th September 1904.

Tours of the Director.

3. Mr. Henniker was on tour for 173 days. In July and August he inspected the Settlement offices at Gauhati and Jorhat, visited Tezpur and inspected the Traffic Registration office at Dhubri. He then proceeded to Silchar, in connection with the settlement of the Janiganj Bazar, and returned to Shillong *vid* Sylhet and the Tropical Plantation at Wahjain. The cold-weather tour commenced in Kamrup, after which a visit was paid to the Garo Hills in order to discuss locally the establishment of a Land Records staff and a system of registration of traffic, more particularly the traffic in cotton. From that place Mr. Henniker proceeded to Silghat and travelled through the Nowgong district and the eastern part of Kamrup inspecting the work of the Land Records staff and then proceeded to Pusa for the Agricultural Conference, which began on the 10th January 1905. From Pusa he went to Cachar for the Agricultural Exhibition, after which he toured in Sylhet. He then proceeded to Dibrugarh to discuss the extension of survey to unsurveyed villages, afterwards visiting the Settlement Officer of Sibsagar's camp in order to inspect the settlement operations in progress. After which he visited Tezpur and inspected the Settlement office at Gauhati, and then proceeded on leave.

In April I visited Silchar in order to discuss the settlement of certain disforested areas with the Deputy Commissioner and then went to Sibsagar to inspect settlement work in the field and also paid a short visit to Dibrugarh. At the end of May I accompanied the Hon'ble the Chief Commissioner on his visit to the Tropical Plantation at Wahjain.

Tours of the Assistant to the Director.

4. The Assistant to the Director of Land Records was on tour for 153 days, exclusive of 34 visits he paid to the Experimental Farm at Upper Shillong. Out of the 153 days, Mr. Basu spent 69 days in three separate tours in the Assam Valley and 36 days in a tour in the Surma Valley in connection with his duties as Registrar of Co-operative Credit Societies, Assam. He gave a part of his time during his tours in the Assam Valley to the supervision of the wheat experiments at Jorhat, Tezpur, and Dibrugarh. He paid five visits to the Tropical Plantation at Wahjain during the year, spending in all 37 days on this work.

In January last, Mr. Basu accompanied the Director of Land Records to Pusa to attend the first meeting of the Board of Agriculture there.

Tours of the Superintendent of Provincial Surveys and the Sub-Assistant Superintendent of Surveys.

5. Mr. T. Shaw, Superintendent of Provincial Surveys, Assam, spent 188 days on tour and checked the maps and records of 117 mandals in the districts of Darrang, Nowgong, and Lakhimpur. The work of 56 out of 117 mandals was tested in the field. He conducted two Survey School examinations for first-class certificates, one at Gauhati and one at Jorhat, and examined 3 and 12 pleaders at

Gauhati and Sylhet, respectively, to test their knowledge in surveying. At Sylhet he tested the survey qualifications of 13 candidates for patwariship with a view to granting survey certificates to them. The above is in addition to his ordinary inspection, and control of his survey subordinates and the Drawing office. He twice visited Dibrugarh to confer with the Director, Department of Land Records and Agriculture, and the Deputy Commissioner regarding the extension survey in progress there and the office work of extension surveys. Mr. Shaw also made a survey of the Bardwar tea estate in Kamrup.

Mr. C. A. O'Donel, Sub-Assistant Superintendent of Surveys, was on privilege leave from the 1st July to the 5th September. From the 6th September to the 11th November he was employed on office duties at Shillong. From the 12th November 1904 to the 19th January 1905 he was in charge of the Drawing office at Shillong during the absence of Mr. Shaw on tour. Mr. O'Donel was then transferred to Bengal.

CHAPTER II.

LAND RECORDS.

Mandals and patwaris.

6. The sanctioned strength of mandals and patwaris was 1,129 on the 30th June 1905, against 1,112 at the commencement of the year. The difference is accounted for by the sanction to the entertainment of 2 additional mandals in Kamrup and 4 additional mandals in Lakhimpur (in which district there was also a reduction of one appointment), and the establishment of a staff of 12 mandals in the Garo Hills. The sanctioned numbers in each grade are :—first grade 223, second grade 683, and third grade 223. The total number on the actual strength is 1,117, of whom 201 are in the first grade, 560 in the second, and 356 in the third. The number of uncertificated mandals is 49, of whom 14 are exempted from passing in survey. Excluding the latter, there are 4 unqualified men in Cachar, 2 in Kamrup, 4 in Darrang, 5 each in Nowgong, Sibsagar, and Lakhimpur, and 10 in the Garo Hills. The average area of a mandal's circle in the Assam Valley is 34,551 *bighas*, and of a patwari's circle in Jaintia and Cachar 20,380 and 20,723 *bighas*, respectively.

The statement in Appendix A shows that the number of mandals resident within their circles is now 407, as against 315 in 1903-1904. Progress has been made in bringing the orders on the subject into force, and a number of men belonging to circles where the present mandals are non-resident have been sent to the Survey schools for training with a view to take the places of the latter. Progress, however, is necessarily slow, as there are large areas where almost the whole population is illiterate. Some transfers of mandals to their home circles have been postponed until the conclusion of the current regular settlement. At the close of the year the rules for the distribution of mandals' pay were revised so as to enable pay bills to be drawn separately for each subdivision instead of, as before, for each district as a whole.

Survey Schools.

7. There was no change in the number of Survey Schools and their locality during the year. The following statement gives the usual statistics.

Year.		Number of pupils who received first-class certificates.				Number of pupils who received second-class certificates.				Total passed.	Total cost of the school.	Total receipt.	Net cost.	Average net cost of each passed pupil.
		Mauzadars.	Mandals.	Candidates.	Total.	Mauzadars.	Mandals.	Candidates.	Total.					
1		2	3	4	5	6	7	8	9	10	11	12	13	14
											Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Fifteen months ending 30th June 1904.	Gauhati ...	...	...	...	...	...	1	85	86	86	1,062 6 3	,013 8 0	48 14 3	0 8 11
	Jorhat ...	...	...	...	...	1	...	29	30	30	519 10 2	465 8 0	54 2 2	1 12 10
	Dibrugarh	...	1	3	4	...	1	13	14	18	675 14 0	309 8 0	366 6 0	20 5 8
Total for 15 months ending 30th June 1904.		...	1	3	4	1	2	127	130	134	2,257 14 5	1,788 8 0	469 6 5	5 8 0
1904-1905 ...	Gauhati ...	...	...	2	2	...	3	80	83	85	1,151 15 6	715 8 0	436 7 6	5 2 2
	Jorhat ...	...	...	...	...	...	...	19	19	19	498 15 9	369 0 0	129 15 9	6 13 6
	Dibrugarh	...	...	...	...	...	1	9	10	10	546 3 10	360 12 0	185 7 10	18 8 9
Total for 1904-1905 ...		...	...	2	2	...	4	108	112	114	2,197 3 1	1,445 4 0	751 15 1	6 9 6

Receipts in the Gauhati School fell owing to the liberal grant of free studentships to Cacharis and others of backward localities where the present mandals are non-resident. At the same time expenditure increased by reason of the construction of a boarding

house for the use of the pupils. Two examinations for first-class certificates, one at Gauhati and the other at Jorhat, were held during the year by the Superintendent, Provincial Surveys.

Supervisor kanungos' touring and inspection.

8. The sanctioned scale on the 1st July 1904 was 42 in the first grade and 22 in the second grade. One post was added to the first grade on the establishment of the new Land Records staff in the Garo Hills district. The staff actually entertained at the close of the year was 28 in the first grade and 37 in the second.

The average area of a supervisor kanungo's circle was:—

	Bighas.
Cachar	255,702
Sylhet (Jaintia)	234,372
Assam Valley	688,202

The amount of touring done by supervisor kanungos was generally sufficient. The supervisor kanungos of Hailakandi, Kanairghat, and Gowainghat failed to reach the prescribed minimum of 200 days. In the Assam Valley the supervisor kanungo of Nowgong town circle, and the supervisor kanungos of Mangaldai and Patharughat circles in Darrang did not spend a sufficient time on tour.

The total length of check-lines run by supervisor kanungos in testing mandals' and patwaris' work was 1,229·99 linear inches, rather less than usual. This is, no doubt, partly accounted for by the completion in the previous year of map correction in both the districts under resettlement. Moreover, the running of lengthy check-lines of no particular value was discountenanced by general orders.

Forty-three field allowances were granted to deserving supervisor kanungos as a reward for good work. The allowances are granted for one year only, and the list is revised at the commencement of each year, a system which is calculated to secure the maintenance of efficiency among those who receive the allowances.

Tours and inspection by Sub-Deputy Collectors.

9. The work done by Sub-Deputy Collectors has been generally good, although *in some instances the number of days spent on tour has not reached the prescribed minimum. In almost every case the explanation of this fact is adequate. Babu Jagat* Chandra Das has been specially commended by the Deputy Commissioner of Lakhimpur for his work in connection with the extension survey. *Srijut Bhola Nath Das and Srijut* Bharat Chandra Das did well. Babu Purna Chandra Mitra's work on the settlement in progress in Cachar deserves commendation. And Babu Debi Charan Rai and Srijut Kamal Chandra Kagti did excellent work in Kamrup.

Inspection of Land Records staff by Deputy Commissioners, Subdivisional Officers, and Extra Assistant Commissioners.

10. The Deputy Commissioner of Cachar inspected the papers of 6 patwaris and 1 supervisor kanungo. He also devoted a considerable time to the inspection and supervision of the settlement of the disforested areas in the Barak, Sonai, and Inner Line reserves, when he examined most of the maps while under preparation. The Deputy Commissioner of Sylhet inspected the papers of 4 supervisor kanungos and 10 mandals. The Deputy Commissioner of Goalpara inspected the papers of 4 mandals and tested the work of 3 mandals in the field. The Deputy Commissioner of Darrang inspected the field work of 19 mandals and tested the survey work of 5 mandals by running check-lines. He also examined the papers of 58 mandals and 6 supervisor kanungos. The Deputy Commissioner of Nowgong checked the field work and examined the papers of 42 mandals. The Deputy Commissioner, Lakhimpur, spent a considerable time in supervising and checking the extension survey in progress in the district: he inspected the field work of 20 mandals and 18 candidates and ran 10·22 inches of check-lines, besides examining the record while under preparation.

The Subdivisional Officer of Hailakandi visited 38 villages and inspected the work of 14 mandals in the field. The Subdivisional Officer of Mangaldai inspected the papers of 5 mandals, but is not reported to have inspected any work in the field. The Subdivisional Officer of North Lakhimpur paid considerable attention to the survey work in progress in his subdivision and ran 1·77 miles of check-lines. The Assistant Commissioner of Dibrugarh ran about 10 miles of check-lines in the area under extension survey.

In Sibsagar and Kamrup the Land Records staff was under the Settlement Officers.

State of land records.

11. It is expected that the introduction of the new and simplified mutation procedure will result in a great improvement in the state of the records, which, except in the districts under settlement, are not as correct as might be wished ; changes in possession are not at once brought on the records at present owing to the dislike entertained by the ordinary lease-holder for the present mutation procedure. For this defect the Land Records staff is not responsible. It is believed that the maps are on the whole fairly correct. But the inspections of the Superintendent of Provincial Surveys indicate that extensions of cultivation are not sufficiently checked by the supervisor kanungos of the Darrang district. My impression is that supervisor kanungos sometimes fail to enforce sufficient discipline among their subordinates, and that standing orders are in consequence occasionally neglected. As an instance, I may refer to the order that crop statistics are to be written up in the field. Mandals frequently disregard this rule, and it is desirable that Sub-Deputy Collectors and supervisor kanungos should pay more attention to this point than they do at present.

Changes in the system of land records.

12. The rules for the maintenance of land records were entirely revised and the new rules were introduced in the districts of Kamrup and Sibsagar.

Condition of survey marks.

13. The statement in Appendix C gives statistics on the subject.

Demarcation advances.

14. The balance outstanding for recovery on the 30th June 1904 was Rs. 18,273-4-3 which, with advances made during the year, resulted in a total demand of Rs. 18,274-1-3. Of this, Rs. 8,479-12-11 was recovered and Rs. 5,883-10-11 was written off as irrecoverable. The balance for recovery at the close of the year was Rs. 3,910-9-5. The subject has received considerable attention recently, and since the close of the year the outstandings have been still further reduced.

Mauza book.

15. The mauza book was maintained only in Darrang and Nowgong. Owing to the introduction of extension survey operations in Lakhimpur, the maintenance of the mauza book was discontinued there.

CHAPTER III.

SURVEY, ETC.

Synopsis of the work done.

16. The Provincial Survey Detachment undertook during the 12 months under report the traverse of grants and villages detailed below :—

(*a*) Traverse and boundary survey of tea grants—

	Square miles.
Nowgong	1·08
Sibsagar	7·39
Lakhimpur	51·36
Total	59·83

(*b*) Traverse for cadastral survey—

Lakhimpur	20·30
	80·13

Besides the above, 28·65 linear miles of railway line from Ledo to Makum junction were surveyed for incorporation in the standard map.

Traverse survey and its cost.

17. The traverse survey carried out during the year was wholly confined to the Brahmaputra Valley. As in previous years, the work was inspected entirely by Mr. Shaw. The total area traversed during the period under report was 80·13 square and 28·65 linear miles. The total cost incurred on this work was Rs. 12,051-6-4, and the average cost rate per square mile was as follows :—

(1) Traverse survey of tea grants—

	Rs. a.
Nowgong	593 13
Sibsagar	169 13
Lakhimpur	120 4

(2) Traverse survey of area for cadastral survey—

Lakhimpur	123 1

(3) Traverse survey of railway line from Ledo to Makum junction in Lakhimpur, Rs. 19-14 per linear mile.

The very high rate per square mile in Nowgong was due to a mistake in instructions, not the fault of the survey officers, which resulted in unnecessary detention of the sub-surveyor and his squad in that district. One sub-surveyor died before joining his post in the field season. The total outturn of work was therefore less than it would otherwise have been, and the cost per square mile of general expenses was necessarily high in consequence of the smallness of the area taken up.

Extension survey in non-cadastral areas in Assam Valley.

18. In Appendix D will be found the details of the surveys which took place during the year.

The figures supplied do not distinguish the detail survey carried out on the basis of a theodolite traverse and that which under recent orders was effected without a traverse. Considerable progress was made in survey without traverse in Kamrup, and the extension survey in Dibrugarh was based on a theodolite traverse.

Extension survey in non-cadastral areas in Surma Valley.

19. In Cachar an area of 2·25 square miles was surveyed in the disforested area of the Barak reserve and progress was made in the survey of the disforested areas of the Inner Line and Sonai reserves.

Survey and settlement.

20. The settlement of Janiganj Bazar in Silchar was concluded and proposals for the settlement of 58 *jungleburi* mahals in Cachar were submitted for the orders of the Chief Commissioner. Also 26 *jungleburi* mahals situated in Silchar town were settled.

The settlement of the disforested area in the Langai Singla reserve in Sylhet was concluded as well as the settlement of 134 *ilam* and *khas* estates situated in various parts of Sylhet.

CHAPTER IV.

RESETTLEMENT.

Sibsagar and Kamrup.

21. The staff employed in Sibsagar and Kamrup, the two districts under resettlement, was as follows :—

District.	Officers.		Period employed.
	Name.	Designation.	
1	2	3	4
Sibsagar ...	Mr. L. J. Kershaw ...	Settlement Officer	From 1st July 1904 to 29th March 1905.
	„ S. G. Hart	Ditto ditto ...	From 30th March 1905 to 30th June 1905.
	Srijut Rajani Kanta Bardalai..,	Assistant Settlement Officer.	From 1st July 1904 to 30th June 1905.
	„ Radha Kanta Handiqui	Ditto ditto ...	Ditto ditto.
	„ Benudhar Rajkhoa ...	Ditto ditto ...	Ditto ditto.
Kamrup ...	Mr. H. C. Barnes... ...	Settlement Officer	From 1st July 1904 to 1st April 1905.
	„ J. McSwiney	Ditto ditto ...	From 1st April 1905 to 30th June 1905.
	Babu Harendra Kumar Ghosh	Assistant Settlement Officer.	From 1st July 1904 to 28th May 1905.
	Srijut Hem Chandra Goswami	Ditto ditto ...	From 1st July 1904 to 30th June 1905.
	Babu Debendra Kumar Mukherji.	Ditto ditto ...	Ditto ditto.
	Babu Debi Charan Rai ...	Ditto ditto ...	From 29th May 1905 to 30th June 1905.

During the recess of 1904, the Settlement Officer, Sibsagar, submitted four group reports, in which he proposed assessments for the permanently-cultivated villages of the Jorhat subdivision and that part of Golaghat for which proposals had not been submitted in the previous year.

Final orders on these reports have been received : the distribution of the leases, which has since been effected, and the fairing of the records will complete the settlement of these two subdivisions excluding the fluctuating area. During the field season the classification and attestation of the permanently-cultivated area in the Sibsagar subdivision and the revision of the maps, records, and classification in the fluctuating area of the whole district were completed.

The Settlement Officer of Kamrup submitted four assessment reports in 1904, and has since the close of the field season of 1904-1905 submitted five assessment reports, thus completing his proposals for the assessment of the whole of the district. In the field season classification and attestation in all the permanent villages remaining for disposal from the preceding season were completed, as well as the revision of the maps and records of the fluctuating tracts.

In both districts leases were distributed in the groups reported on in 1902-1903.

CHAPTER V.

AGRICULTURAL EXPERIMENTS.

Season.

22. The report deals with the twelve months ending with the 30th June 1905. The characteristic feature of the season was the prolonged cold wave which passed over Northern India in February 1905. It was accompanied by severe frost at Shillong, which caused some losses among the trees at the Fruit Garden. Some plants at the Tropical Plantation at Wahjain also suffered from the effects of the abnormal cold.

THE UPPER SHILLONG EXPERIMENTAL FARM AND SHILLONG FRUIT GARDEN.

Potatoes.

23. An experiment was made with fourteen varieties of potatoes at the Fruit Garden at Shillong. They were sown in February and taken up in June and July 1905. The following statement exhibits the yield obtained from each variety. All the beds were manured with cow-dung at the rate of 960 baskets per acre (each basket weighing about half a maund) and 20 maunds per acre of mustard cake. To prevent or rather to mitigate the effect of blight, the crop was sprayed twice with Bordeaux mixture during the second half of May. Owing to the smallness of the supply of seed potatoes of certain varieties, it was not possible to plant out an equal area of each variety. After harvesting, a number of tubers of each variety were examined to see if they showed any brown stains or other signs of potato disease.

Statement showing the yields of fourteen varieties of potatoes in 1905.

Variety.	When and whence imported.	Number of beds planted (each = $\frac{1}{320}$th acre).	Outturn of area planted.	Outturn per acre.	Remarks.
1	2	3	4	5	6
			Mds. srs.	Mds.	
Magnum-Bonum ...	From England, 1898 and 1902.	12	10 23	282	Kidney, white flesh. Tubers badly diseased. Second heaviest yield.
Harbinger	From England, 1898	8	4 35	195	Kidney, white flesh. Tubers badly affected.
Early Regent ...	Ditto ...	8	4 21	181	Kidney, white flesh. About half the tubers diseased.
Triumph	Ditto ...	8	3 10	130	Kidney, white flesh. Tubers badly diseased.
Flowerball	From England, 1902	8	4 27	187	Uneven shape, pink skin, white flesh. Tubers fair.
Patna	From Bengal, 1904	8	7 12	292	Round; pink skin; flesh slightly yellow. Tubers free from stains. Heaviest yield of all.
Brownell's beauty ...	From New South Wales, 1904.	1	0 21	168	All roundish shape; pink skin, but white flesh. All free from brown stains. Early Rose, Herd Laddie and Reading Russet, showed purple patches and lines in flesh.
Aderondack	Ditto ...	1	0 24	192	
Early ruby	Ditto ...	1	0 19	152	
Early rose	Ditto ...	2	0 39	156	
Reading Russet ...	Ditto ...	1	0 6	48	
Herd Laddie ...	Ditto ...	1	0 7½	60	
Sutton's Magnum Bonum	From England, 1905	8	2 39	119	Kidney, white flesh. Tubers very slightly affected.
Sutton's discovery ...	Ditto ...	2	0 30	120	Oval shape, white flesh. A small proportion of tubers affected.

An examination of the statement brings out the following points :—

First, in respect of yield, the Patna variety and next to it the farm stock of Magnum Bonum gave much the best results. Secondly, in respect of freedom from disease the first five kinds, including the farm grown Magnum Bonum, were the worst. Patna and the 6 Australian kinds were free from disease so far as their tubers were concerned. Sutton's Magnum Bonum and Sutton's Discovery, both grown from recently imported seed, were not wholly free from disease, but showed much less than the five varieties which had been in cultivation at the farm for several years. The experience gained at the farm has shown that any variety, if grown for several years in the highly infectious atmosphere of these hills, gradually becomes infected and more and more diseased every year. This experience has obtained further confirmation from this year's results.

"Patna" came off the best in respect of yield as well as of freedom from disease. It has the further advantage of being one of the two earliest varieties to ripen (the other being Early Ruby). Its only drawback is the yellowish colour of its flesh which detracts somewhat from its quality.

Experiments in spraying with Bordeaux mixture.

24. A series of spraying experiments was initiated by Dr. Butler, Cryptogamic Botanist to the Government of India, who visited Shillong in May last. A short account of each series is given below :—

First series.—There were four beds of potatoes, each $\frac{1}{160}$th of an acre. Two of these, Nos. 2 and 4, were sprayed twice with Bordeaux mixture on the 11th and 26th May, respectively, and two others left unsprayed. The acreage yield of the 4 beds was—

	Mds.
No. 1 unsprayed	224
„ 2 sprayed	224
„ 3 unsprayed	220
„ 4 sprayed	256
Average of the two sprayed beds	240
Ditto unsprayed	222
Difference in favour of spraying	18
Quantity of spraying mixture used in two sprayings	320 gallons.

Second series.—There were two beds, each $\frac{1}{80}$th of an acre. One was sprayed twice with Bordeaux mixture as in the first series, and the other left unsprayed. The yields were—

Sprayed	148 mds. per acre.
Unsprayed	146 „
Difference in favour of spraying	2 „
Quantity of Bordeaux mixture used	280 gallons per acre.

Third series.—There were three beds, each $\frac{1}{160}$th of an acre, of which two were sprayed, once on 12th May, with 160 gallons per acre of Bordeaux mixture with rosin, and a second time with 120 gallons per acre of Bordeaux mixture (plain) ; and the third left unsprayed. The yields were—

No. 1 sprayed	244 mds. per acre.
„ 2 unsprayed	192 „
„ 3 sprayed...	204 „
Average of sprayed	224 „
„ unsprayed	192 „
Difference in favour of spraying	32 „
Quantity of mixture used per acre—	
Bordeaux mixture	280 gallons.
Rosin mixture	$6\frac{2}{3}$ „

Fourth series.—There were four beds, each $\frac{1}{160}$th of an acre, of which two were sprayed, twice with Bordeaux mixture and gur on 13th and 25th May, and two left unsprayed. The yields were—

No. 1 sprayed	172 mds. per acre.
„ 2 unsprayed	136 „
„ 3 sprayed	132 „
„ 4 unsprayed	120 „
Average of sprayed	152 „
Ditto unsprayed	128 „
Difference in favour of spraying	24 „
Quantity of Bordeaux mixture used	240 „
Gur	$11\frac{1}{4}$ seers „

Fifth series.—There were fourteen beds, of which 7 were sprayed with Bordeaux mixture on 6th June after the appearance of disease, and 7 others left unsprayed. The sprayed and unsprayed beds alternated with one another. The yields were—

	Mds.	srs.
Average of 7 sprayed beds per acre	186	11
Ditto of 7 unsprayed beds per acre...	167	17
Difference in favour of spraying	18	34
Quantity of Bordeaux mixture used per acre	130 gallons.	

The results of the five series are summarised in the statement which follows :—

Summary of the spraying experiments, 1905.

	1st series.	2nd series.	3rd series.	4th series.	5th series.
Quantity of spraying material used per acre—					
Bordeaux mixture (gallons)	320	280	280	240	130
Rosin mixture (gallons)	...	...	$6\frac{2}{3}$	...	...
Gur (lbs.)	...	...	...	$22\frac{1}{2}$	...
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Cost of spraying material used per acre ...	13 7 0	11 12 0	15 8 0	12 3 0	5 7 0
Estimated cost of labour in spraying (2 men doing one acre in a day at 6 annas each).	1 8 0	1 8 0	1 8 0	1 8 0	0 12 0
Total cost of spraying per acre	14 15 0	13 4 0	17 0 0	13 11 0	6 3 0
	Mds.	Mds.	Mds.	Mds.	Mds. srs.
Increase in yield per acre due to spraying ...	18	2	32	24	18 34
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Estimated value of increased yield at Re. 1-2 per maund.	20 4 0	2 4 0	36 0 0	27 0 0	21 3 0
Profit + or loss — per acre due to spraying ...	+5 5 0	—11 0 0	+19 0 0	+13 5 0	+15 0 0

The summary shows that in every instance, except one, the spraying led to an increase of yield, and its cost was more than repaid by the increased yield. So far spraying proved beneficial, but as regards the main object of spraying, namely, the prevention of disease, it practically failed. The experiments only confirmed our previous experience that, while spraying with Bordeaux mixture enabled the potato plant to withstand the effects of the blight longer than it otherwise would and thus enabled it to live longer and produce a larger yield, it was wholly ineffectual, in the wet climate of the Khasi Hills, to keep off blight altogether.

Manure experiments.

25. Mustard cake was used as in previous year with very good effect as a manure for potatoes. The use of this manure at the rate of 20 maunds per acre (costing about Rs. 45) resulted in heavy yields such as 200 maunds and over per acre. A new potato manure sold by Messrs. Waldie & Co., of which the basis seems to be superphosphate of lime, kainit and sulphate of ammonia, was tried during the year, but it did not compare favourably with mustard cake.

The results were as follows :—

	Mds. srs. per acre.	Value. Rs a. p.
1st series—		
3 beds manured with oil-cake (20 maunds per acre) in conjunction with cowdung gave ...	213 13	240 0 0
3 beds manured with Waldie's manure (10 maunds per acre) in conjunction with cowdung gave	199 0	223 14 0
Difference in favour of oil-cake	14 13	16 2 0
	Rs.	
Add difference in price—		
20 maunds of oil-cake	45	
10 maunds of Waldie's manure, at Rs. 5-8 ...	55	
Difference	10	10 0 0
Total difference in favour of oil-cake ...		26 2 0

2nd series—

	Mds. srs. per acre.	Rs.	a.	p.
3 beds manured with oil-cake (40 maunds per acre)	140 0	157	8	0
3 beds manured with Waldie's manure (20 maunds per acre).	157 13	177	0	0
Differenee in favour of Waldie's manure ...	17 13	19	8	0
Difference in price of oil-cake		20	0	0
Net difference in favour of oil-cake		0	8	0

An experiment made in the field of a Khasi cultivator living near the Farm illustrates the value of mustard cake in a most striking manner. The use of 12 seers of cake, costing about 11 annas, increased the yield by about 2 maunds valued at Rs. 2-4.

New crops.

26. A number of garden and field crops new to the Khasi Hills was tried during the year at the Farm and Fruit Garden: these were rhubarb, asparagus, a large variety of squash (*Sechium edule*), American sweet potatoes, a special variety of potatoes (*Solanum commersonii*) introduced by Messrs. Vilimorin Andrieux & Co., of Paris, wheat, barley, oats and flax. Rhubarb and asparagus have been found to grow very well at Shillong. Bulletins on the subject have been issued in Khasia in order to popularize the cultivation of rhubarb and asparagus in the hills, and seedlings and seed have been distributed.

The large variety of squash was introduced from Madras, and was found to grow exceedingly well. It was much liked by the people, and a large quantity of seed was distributed during the year.

American sweet potatoes were grown from seed supplied in 1903 by the Inspector General of Agriculture. There were three varieties:—Nonsimmond, Virginia, and New-Jersey. All three grew well, but none of them appeared superior to the country varieties of sweet potato in respect of yield or sweetness. Wheat, barley, and oats were grown on a small area at the Fruit Garden at an elevation of about 5,000 feet. The land lay on a slope ordinarily free from frost. The seed was obtained from Behar. The crops were sown in September and continued to grow well through the winter, but failed to withstand the abnormally heavy frosts which occurred in the early part of February. The yield was consequently poor, and the grain did not fill properly. The experiment, however, showed that in ordinary years these cereals could be successfully grown as winter crops at the elevation of Shillong, though it is doubtful whether the cultivation of such crops in these hills will pay. The soil of the hills is very poor, and nothing grows well on it without the help of manure. Labour, too, is expensive, and makes the cost of cultivation high. Oats have been found to thrive particularly well at Shillong, and it is believed the cultivation of this crop for winter fodder will be found to pay.

Flax has been experimentally cultivated at the Farm for several years, but without any definite result. The crop was sown in September and gathered in March. The plants grew to a height of about four feet, the stems were somewhat thin, and the fibre did not seem particularly strong.

Solanum commersonii, of which a very small quantity of seed tubers was obtained a few months ago from Paris, has as yet yielded no definite result. The crop has been growing now for four months, but as yet it has produced no tubers. The plant has the habit of sending out long underground stems from which suckers continue to appear all over the surrounding ground. The original plants which came out from the tubers have died off without producing any tubers, but the suckers continue to grow and will probably last till winter.

Fruit trees at the Farm and the Fruit Garden.

27. The fruit trees under trial are apple, pear, cherry, plum, apricot, peach, grape, gooseberry, raspberry, currant, strawberry, fig, walnut, almond, loquat, tree-tomato, cherimoyer, mountain papaya, and Spanish chestnut. Some of the fruit trees, particularly tree-tomato, cherimoyer and mountain papaya, suffered from the severe frosts experienced in February last. Most of the fruit trees suffered from the attacks of various species of insects (mostly beetles) which are extremely prevalent in the Khasi Hills and against which no successful remedy has yet been found.

It is too early yet to speak of the success or otherwise of most of the fruit trees under trial: the progress made by each species of tree tried is noted below:—

Apple trees from England and Saharanpur—Continue to grow well. A few trees flowered, but failed to set fruit.

Pear trees from England and Saharanpur.—The English trees have not made much growth, but those obtained from Saharanpur are growing very well. One English tree flowered but did not set fruit.

Cherry from England—The trees have grown very well. Three trees flowered, and one set a few fruits which dropped off prematurely.

Plum from England—Growing well. A few trees flowered, but only one set fruit, which however, failed to reach maturity.

Apricot from England—Growing well.

Peach, English—The trees are growing very well, and several trees bore fruit.

Grape, English and Kashmir.—Some of the vines are sheltered in a house and others planted outside. The latter suffered greatly from insects and their growth has been seriously checked. Those planted under the eaves of a house suffered, on the other hand, from vine mildew (*Oidium*). Sulphur dusting has been found useful in checking this fungus disease. Some of the older vines flowered this year, but only one has set fruit.

Gooseberry, English.—The bushes are in a languishing condition, although they made good healthy growth during the spring. Two plants bore a few berries.

Raspberry, English.—All the bushes at the Farm and the Fruit Garden have died off. Raspberry plants appear to suffer from the attack of an unknown fungoid disease which causes the old flowering wood to die back prematurely. The total failure of the plants at the Farm and the Fruit Garden was due to this disease.

Currant, English.—The bushes made very good growth during the spring. Many of them bore fruit. Many of the bushes suffered from a fungoid disease, which caused the old wood to die back, and thus retarded growth.

Strawberry, English and Saharanpur.—The Saharanpur strawberry did not produce so good a yield this year as last year. Several of the English varieties did very well this year, and appear full of promise.

Fig, English.—Most of the trees have made very good growth and are now in bearing. A few were killed by borers.

Walnut—Grown from seed obtained from Kashmir. A large number of seedlings has been raised, partly for planting at the Fruit Garden, and partly for distribution. The plants are growing well.

Almond, English.—The trees are growing very well.

Loquat—From Calcutta. Growing well.

Tree tomato—Grown from seed obtained from Ceylon. The plants were killed down to the ground by the severe frosts of February last. Some of the trees threw up new shoots from the roots and these are growing well.

Cherimoyer—Grown from seed obtained from the Southern Shan States. A large number of plants was killed by frosts. The surviving plants are growing well.

Mountain papaya—Grown from seed obtained from Ceylon. The plants suffered much from frost and many of them were killed outright. The surviving plants are growing well.

Spanish chestnut, English.—The trees suffered badly from insects and their growth has in consequence been greatly checked.

Propagation of fruit trees.

28. The propagation of fruit trees with a view to their distribution among cultivators has been one of the objects of the Department. It has been found that the English apple and pear can be successfully grafted on the indigenous stocks, which are wild in the Khasi Hills. A large nursery of these stocks and of plum and peach stocks was laid out during the year.

A number of apple and pear grafts was made last year on stocks planted in previous years. An attempt to graft English grapes on a wild native stock also proved successful. A large number of other fruit trees, including rooted cuttings of grape and fig, and seedings of walnut, Spanish chestnut, tree tomato, mountain papaya, and cherimoyer, were grown for distribution.

Insecticides.

29. The destruction of insects has been a most serious problem for fruit-growers at Shillong. Among insects, beetles are the most injurious to fruit trees. Paris green was used in former years, but with no effect. In May last, Mr. Lefroy, Entomologist to the Government of India, visited Shillong. He advised the use of lead arseniate for beetles, but repeated applications of it had no effect. It did not appear that the lead arseniate succeeded in killing the beetles, as not a single dead beetle was found on the trees, or on the ground below. Assafætida was tried, but with the same negative result. A beetle trap recommended by Mr. Lefroy was found successful. It consisted of a white dish containing a thin layer of water with a little kerosine oil floating on it, and a

piece of white cloth hung on one side of the dish. The insects appear to be attracted to the dish by the white colour of the cloth and the dish. The trap proved just as good with the cloth as without it. A number of these traps was set up among the fruit trees, and caught a large number of beetles mostly during the day time. But neither these nor continual hand picking which was kept up all the time that the beetles lasted were of much avail in saving the infested trees from injury.

Introduction of superior strains of milch cattle.

30. A herd of cross-breed English cows and a bull was imported from Patna in 1902 and two Bhutia cows in 1903; the Bhutia cows are a cross between a Mithan bull (*Bos frontalis*) and the Thibetan cow. Both the breeds have produced a decided improvement on the local Khasia cow which is a very poor milker, though its milk is of rich quality. A cross breed is being produced by crossing Khasia and Bhutia cows by the half English Patna bull. The merit of these crosses will be known a year or two hence. At the close of the year, the herd comprised 1 Patna bull, 10 Patna cows, 14 Patna calves and young stock, 2 Bhutia and 10 Khasia cows, 12 Khasia heifers and 19 cross-bred young animals. Four Patna bull calves were sold during the year for breeding purposes, and several applications for bull calves are pending for disposal, showing that the Patna breed has met with the appreciation of the Khasi cultivators. In June 1905 there was an outbreak of foot-and-mouth disease, similar to the outbreak experienced in the previous year. It caused no loss.

Introduction of an English breed of pigs.

31. A herd of English pigs has been maintained at the farm since December 1902. They have been found to breed freely at the Farm. In the beginning they attracted much attention from the Khasias, and a large number of young animals was sold among them for breeding purposes. But the breed has ceased to be popular among the Khasias who complain that the English pigs are too costly and troublesome to keep. During the year eight pigs were sent to the Deputy Commissioner, Naga Hills, four to the Deputy Commissioner, Garo Hills, and four to a planter in the Assam Valley, for breeding purposes: besides, eleven animals were sold locally to Khasias, but it is feared these latter were all intended for slaughter.

Fodder and ensilage.

32. A large quantity of maize and sweet potato was grown for fodder during the year. The whole of the maize crop was ensiled, partly in the green state when the whole plant-stalk, leaves and cob was used, and partly after the cobs had ripened and been gathered. The sweet potato crop yielded a large quantity of tubers which proved an excellent substitute for grain for cows as well as for pigs, and gave a large quantity of succulent herbage.

Four silos were made during the year. Of this, one was a pit silo and three were box silos built overground. The four silos were filled with 867 maunds of maize fodder and 144 maunds of grass, all chopped up with a chaff cutter: out of 1,011 maunds put in, 505 maunds or just half was found to be in excellent condition when taken out. The proportion of loss through rottage was very considerable. How the wastage can be reduced is a problem which requires to be solved.

Mention was made in the last annual report of the fact that the example of the Experimental Farm in the matter of preserving fodder in silos was being followed by Khasia cultivators living in the neighbourhood of the Farm. A number of prizes was offered by Government to encourage the raiyats to make silos. During the year under report, twelve silos were made by Khasia cultivators. The silos were judged by the Assistant to the Director in January last, and seven of them were awarded prizes ranging from Rs. 20 to Rs. 5.

Government Dairy.

33. The Experimental Government Dairy at Shillong which had been in existence since July 1900 was sold to a private person in December 1904. There are now three private dairies at Shillong, all equipped with modern appliances.

Sericulture.

34. An account of two very successful experiments made at Shillong and Kohima in the Naga Hills in the spring of 1904, in rearing silk worms from seed imported from France, was given in the last Annual Report of the Department. The experiment was repeated at Shillong in the spring of this year and proved equally successful. No experiment was made at Kohima this year, the Nagas having shown no aptitude for rearing silk worms. It is a matter of satisfaction to be able to report that silk worm rearing has already found favour among the Khasias. Seven men took seed from the Department and all of them succeeded in rearing the worms. The seed used this year was partly French and partly Italian, all being of the Univoltine worms reared in Southern Europe. The experiment was varied at the Farm by rearing a part of the worms on the

wild mulberry and the rest on the garden mulberry. No appreciable difference either in respect of size or of quality is visible between the two lots of cocoons. The total yield of green cocoons at the Farm amounted to 1 maund 14 seers. The seven Khasi rearers obtained an aggregate outturn of 26 seers, the whole of which was purchased by the Department at a price which was settled at a fancy rate (Rs. 2-8 per seer) in order to give encouragement. The cocoons raised in 1904 were valued by a French expert at Rs. 80 per maund : samples out of the present year's crop are being sent to experts for valuation ; and it is intended to send the remainder of the cocoons to London for sale.

In the experimental crop at the Farm there was some loss through *grasserie*. The worms looked otherwise healthy. A subsequent examination of female moths made by the Head Master of the Sericultural School at Rampore Boalia revealed the existence of pebrine and flacherie germs in the moths. There was an intention of using locally-raised seed for next year, but as the parent moths have been found diseased, the idea of using seed obtained from them has been abandoned. Until arrangements can be made for producing healthy seed locally, the Department will be obliged to import seed every year from Europe.

The chief obstacle to the expansion of the silk worm rearing industry in the Khasi Hills is the paucity of mulberry trees in the district. Two prizes have been offered for encouraging the planting of mulberry. Four men are now competing for the prizes which will be shortly awarded. If the wild mulberry proves suitable, there should be no difficulty in providing for sericulture on a large scale.

Experiment with Nitrogen fixing bacteria.

35. Two packets of bacteria culture, one for pease and the other for clover, were obtained last cold weather from the United States. The culture for pease was tried in strict accordance with the instructions given by the United States Department of Agriculture. Both seed and soil were inoculated with the culture. The land on which the trial was made had been under pine forest for a long time and had borne a crop of potatoes followed by wheat. It had never grown pease before. There were four small beds, one of which was sown with inoculated seed (*i.e.*, seed dipped in the culture), the second with uninoculated seed, the third with uninoculated seed *plus* a small quantity of inoculated soil, and the fourth with uninoculated seed *plus* a small quantity of soil from an old pea garden. All the four beds were otherwise treated exactly alike. The crop grew equally well in all the four beds and not the least difference between them was visible. A similar experiment made in pots yielded the same result.

Bees.

36. The experiment in bee-rearing has not proved successful. The season of 1904 proved very unfavourable.

Expenditure and income of the Farm and Fruit Garden.

37. The following statement shows the expenditure during the twelve months under report separately for the Experimental Farm and the Fruit Garden :—

	Experimental Farm. Rs. a. p.	Fruit Garden. Rs. a. p.
Establishment	552 0 0	564 0 0
Extra labour	833 6 0	674 10 4
Plants and seeds	123 10 1	294 9 0
Appliances	174 1 0	24 2 3
Manure	47 11 6	235 11 2
Houses and sheds	450 10 10	579 7 6
Food for cattle and pigs	1,349 6 2	.....
Silos	163 11 6	.....
Fencing roads and lawn	.....	34 11 0
Bee-keeping	.....	51 15 6
Compensation for land	.....	366 2 0
Purchase of live stock	248 9 0	.....
Miscellaneous	337 4 1	161 9 10
Total	4,280 6 2	2,986 14 7

Out of the total expenditure of the Farm, a sum of Rs. 1,496-2 was obtained from the Dairy fund, and the rest was met from Government grants. A sum of Rs. 347-1 out of the total expenditure of the Fruit Garden was likewise met from the Dairy fund. The income of the Farm amounted to Rs. 1,047-3-11, out of which Rs. 704-12-5 was contributed by the sale-proceeds of milk, and the remainder by the sale of cattle, pigs, and agricultural produce. The income of the Fruit Garden amounted to Rs. 36-4-0.

The Tropical Plantation at Wahjain.

38. The more important plants under trial at Wahjain are the following :—

A. Spices.—Cinnamon.
Lesser cardamom.
Greater cardamom.
Nutmeg.
Clove.
Black pepper.

B. Drugs.—Cocoa.
Coffee.
Camphor.
Betel leaf.
Citronella and lemon grass.

C. Tropical fruits.—Natal orange.
Jamaica orange.
Khasi orange.
Kew and Ceylon pine-apples.
Bangalore papaya.
Grafted mango.
Grafted litchi.
Sapota.
Superior varieties of banana.
Bread fruit.
Rambutan (a spices of litchi from Ceylon)
Soursop.
Cherimoyer.

D. Miscellaneous.—Arrowroot.
Caravonica cotton.

It is too early to expect results except from papaya, pine-apple, banana, arrowroot, and cotton. Many of the trees are not expected to bear fruit for 8 or 10 years, and some, like the nutmeg and clove, may take 20 years or more to come into bearing.

Most of the plants put out are doing well. The severe cold of last winter told unfavourably on some of the plants, particularly on the cocoa, nutmeg, and bread fruit trees. A few plants were killed in consequence.

Some of the papaya and banana trees have flowered and are bearing fruit. A large quantity of arrowroot was manufactured at the plantation. It was of fairly good quality, but the cost of manufacture proved prohibitive.

A small number of cara vonica cotton trees was raised in the plantation from seed obtained from a Mr. Thomatis of Queensland in 1904.

There are two varieties of it, named No. 1 and No. 2, both perennial. No. 2 seems to grow better at Wahjain than No. 1. A few bolls of cotton were obtained from No. 2. A sample of the lint was valued by Mr. Greenway of Messrs. Shaw, Wallace & Co., at Rs. 36 per maund, which compares favourably with the price obtained for Assam cotton. Some of the cotton trees are now in vigorous growth.

The expenditure on the tropical plantation for the year amounted to Rs. 3,171-9-1, out of which Rs. 1,378-6-4 was incurred for the construction of an inspection bungalow. The remainder (Rs. 1,793-2-9) represents the ordinary expenses of the plantation. There was no income during the year.

Agricultural Experiments outside the Experimental Farms.

Wheat experiments.

39. An account of some experiments in wheat made in 1903-04 in Manipur and in certain selected localities in Cachar and the Assam Valley was given in paragraph 56 of the last annual report of the Department. These experiments having generally proved a failure, arrangements were made for the conduct of a limited number of experiments during the last cold weather in Kamrup, Darrang, Sibsagar, and Lakhimpur, through the agency of a few selected cultivators, mostly men from Northern India, who are accustomed to the cultivation of this crop.

Rewards were offered to the cultivators to encourage them to take an interest in the crops. The crops grew well in most places, but were damaged in many cases by cattle and birds. Owing to these and other causes the yield was unsatisfactory, except in the experiment made in Kamrup, in which the outturn amounted to 1,050lbs. per acre. The quality of the wheat obtained in Kamrup is not known; elsewhere the grain appeared to be shrivelled and showed a marked poorness in quality. It is proposed to repeat the experiments during the ensuing cold weather.

The Superintendent of Lushai Hills was supplied with a quantity of seed-wheat for experimental cultivation in the Champhai Valley during the last cold weather. The result is not yet fully known, but I believe it was not successful.

Carvonica cotton and Nawsari cotton.

40. Three varieties of cotton were tried during the year, namely:—Nawsari, of which 50lbs. of seed was supplied by the Inspector General, Agriculture, in April 1904, and two varieties of perennial cotton, named Caravonica, No. 1, and Caravonica, No. 2, obtained in May 1904, from Queensland. The seed of all the three kinds was distributed to a large number of persons in different parts of the province. Nawsari cotton did not succeed in any place: the prospects of Caravonica cotton are doubtful. In many places either the seed failed to germinate, or the plants died out prematurely. In some of the experiments the plants are reported to be alive and growing, and as they are perennials, they may possibly succeed. Mention has already been made of the Caravonica plants, in the tropical plantation at Wahjain, and of the small quantity of lint obtained therefrom. It was the only place where any yield was obtained.

Potatoes in the Naga and Garo Hills.

41. With a view to the introduction of potato cultivation in the Naga Hills and the Garo Hills, two maunds of seed-potatoes were supplied by the Department to the Deputy Commissioner, Naga Hills, and half a maund to the Deputy Commissioner of Garo Hills for experimental cultivation. In the Naga Hills, the crop is reported to be doing well. In the Garo Hills, the crop grew well for some time, but died off prematurely. The cause of failure is not known.

Terraced rice cultivation in the Sema country in the Naga Hills.

42. An attempt made by the Deputy Commissioner, Naga Hills, to introduce the Angami system of terraced rice cultivation among the Sema Nagas did not meet with encouraging results. The experiment was conducted under the guidance of three experienced Angami cultivators and was fairly successful as far as the crop was concerned. But the Semas did not seem to have any liking in this system of cultivation, and the Deputy Commissioner thinks that the apathy and disinclination of the Semas to adopt new methods will not be overcome until the pressure of population on the soil has increased.

Jumla rice.

43. At the request of Major Howell, Deputy Commissioner, Naga Hills, 5lbs. of seed of Jumla rice was procured in August 1903 for experimental cultivation in that district. This variety of rice is grown at high altitudes in Nepal. The seed having arrived late, it was kept over till 1904, when it was sown. The crop is reported to have grown well. But as it ripened before the ordinary harvest time of wet rice and before the harvest festival could be held, the Nagas allowed it to be destroyed by birds.

CHAPTER VI.

MISCELLANEOUS.

44. During the year Dr. E. J. Butler, Cryptogamic Botanist to the Government of India, and Mr. H. Maxwell Lefroy, Entomologist to the Government of India, toured in the province and visited the Farm and Fruit Garden at Shillong and the Tropical Plantation at Wahjain.

Collection of economic products.

45. During the year under report botanical specimens of 15 different plants were sent to the Reporter on Economic Products, as well as collections of mat-making materials and indigenous iron manufactures from several districts.

Supply of seeds and other products to correspondents.

46. Mention has already been made of the large quantity of seed potatoes supplied from the Experimental Farm to correspondents during the year. Besides, numerous requisitions for seed and plants of rhubarb, asparagus, Spanish chestnut, mulberry, squash, and Khasia orange were complied with during the year.

Bulletins issued.

47. Four bulletins were issued by the Department during the year giving publicity to some of the results obtained at the Experimental Farm and Fruit Garden. Three of these relate to the cultivation of rhubarb, asparagus, and Spanish chestnut, and one was a report on the award of prizes by Government for silos made by Khasia cultivators last year.

Breeding bulls.

48. Exclusive of the Patna bull on the Government Farm, there are five Government breeding bulls. The bull at Cachar was sick throughout the year. That at Haflong is reported to be

useless. The bull at Gelahating is unfit for breeding purposes. The bull at Shillong was in good condition: six successful coverings are reported. The bull at Nahorjan died.

Cattle-disease.

49. Cattle-disease, more particularly rinderpest, occurred in all the plains districts of the province and was particularly severe in Cachar, the north of Sylhet, and Lakhimpur. Foot-and-mouth disease caused a high mortality in Nowgong. The statistics on the subject will be found in Appendix F.

Veterinary staff.

50. The formation of a Veterinary staff for this province was under consideration during the year and the subject will be dealt with at length in the next annual report.

CHAPTER VII.

FINANCIAL.

Expenditure.

51. The expenditure incurred by the Department during the year was Rs. 3,79,142-4-2, as detailed below:—

	Rs.	a.	p.
Superintendence, including rain-gauge charges, veterinary charges, experimental cultivation and cost of economic collection.	58,911	14	9
Settlement	1,16,747	11	0
Survey Detachment (excluding Rs. 17,668-5-9 debitable to Imperial).	17,883	12	3
Survey schools	2,197	3	1
Kanungo establishment	1,77,597	4	4
Registration of trade	5,804	6	9
Total	3,79,142	4	2

Compared with the 12 months ending the 30th June 1904, there has been an increase of nearly Rs. 11,000 in expenditure. The increase mainly occurred under the heads "Settlement" and "Kanungo Establishment." The following causes contributed to the increase:—

(*a*) Entertainment of Settlement establishments on a more extensive scale than before.

(*b*) Appointment of four new supervisor kanungos and some mandals for non-cadastral areas: promotion to higher grades, and grant of field allowances and special rewards to supervisor kanungos and mandals on a more extensive scale than before.

H. C. BARNES,

Offg. Director, Department of Land Records and Agriculture, Assam.

Shillong,

The 31st August 1905.

APPENDIX A.

Statement showing the number of mandals and patwaris in each subdivision and the number in charge of their home circle.

Subdivision.	Number of mandals and patwaris.						
	Year under report.				Previous year.		
	Resident.	Specially exempted.	Non-resident.	Dismissed during the year for non-residence.	Resident.	Specially exempted.	Non-resident.
1	2	3	4	5	6	7	8
Hailakandi	10	11	8†	...	5	...	24
Silchar	12	...	56	...	12	...	56
Jaintia (North Sylhet) ...	7	...	39	...	4	...	42
Pratabgarh	1	...	9	...	1	...	9
Dhubri	4	...	29‡	...	3	...	30
Barpeta	26	...	44	...	26	...	44
Gauhati	103	...	127	1	88	...	143
Mangaldai	18	...	67	1	11	...	74
Tezpur	24	18*	16	...	24	9	23
Nowgong	73	...	95	...	37	...	131
Golaghat	21	...	35	...	19	...	37
Jorhat	25	...	52	...	22	...	55
Sibsagar sadr	28	...	44	...	19	...	53
North Lakhimpur ...	17	...	15	...	11	...	22
Dibrugarh ...	37	...	43§	...	32	...	44
Garo Hills	1	5	6	...	1	5	6‖
Total	407	34	685	2	315	14	793

* Whose homes are within two miles of their circles and who are therefore exempted from making homes in their circles.

† They have been directed to live in their circles and change residence within a year's time.

‡ Of these, homes of two mandals are within a mile of their circles.

§ The non-resident mandals of sadr subdivision have been warned to make their homes in their circles, exception being made in favour of 17, who live within 2 to 3 miles of their circles.

‖ It has been found impossible to get men from every circle from among the inhabitants. Many circles are inhabited by Rabhas and Koches, who do not do mandal's work, and the Deputy Commissioner had to take what applicants he could get.

APPEN

Work Statement of Sub-Deputy Collectors

Subdivision.	Name of Sub-Deputy Collector.	Total number of days in charge.	Total number of days on tour.	Number of mandals or patwaris in circle.
1	2	3	4	5
Hailakandi ...	Babu Haris Chandra Sen ...	111	51	29
	Maulvi Muhammad Sadir ...	172	44	29
	„ Ikram Russal	82	29	29
	Babu Purna Chandra Mitra ...	53	...	29
Silchar	Ditto ditto ...	304	112	68
	Munshi Saifuddin Ahmed, B.A. ...	119	74	46
	Babu Pradyumna Charan Das ...	150	37	22
North Sylhet ...	Maulvi Tazammul Ali, B.A. (Kanairghat tahsil).	365	134	16
	„ Abdur Rahim, B.A. (Goainghat tahsil).	197	96	30
	Srijut Surjya Kanta Barua, B.A. (Goainghat tahsil).	168	51	30
North, Sylhet South Sylhet, Habiganj, and Sunamganj.	Babu Brindaban Chandra De, B.A. (Ilam).	12	...	10
	„ Sris Kumar Sen (Ilam) ...	295	63	
	„ Joges Chandra Datta, B.L. (Ilam).	27	...	
Karimganj ...	„ Krishna Kumar De ...	365	182	10
Dhubri	Maulvi Mofizur Rahman, B.A. ...	365	175	33
Barpeta	Srijut Kamal Chandra Kagti, B.A.	365	180	62
	„ Annada Charan Bhattacharyya, M.A.	152	1	40
	„ Ratna Kanta Barua, B.A. ...	72	8	22
Gauhati ...	Maulvi Didaruddin Borah (Gauhati tahsil).	365	156	18
	Srijut Shyam Lal Chaudhuri (Palasbari tahsil).	256	109	23
	Babu Banga Chandra Chaudhuri ...	257	152	26
	„ Devi Charan Ray, M.A. ...	341	95	...
	„ Giris Chandra Nandi, B.A. ...	365	153	38
	Srijut Janaki Nath Das Faisalanabis, B.A.	365	173	26
	Babu Tarini Charan Nandi (Patidarrang tahsil).	365	215	20

DIX B.

for the year ending the 30th June 1905.

Number of mandals or patwaris whose papers were checked.	Number of villages in circle.	Number of villages visited.	Total length of check-lines run (linear mile).	Area, in acres, of concealed cultivation discovered.	Remarks.
6	7	8	9	10	11
29	267	2	...	...	
29	267	24	...	...	
10	267	17	3·91	...	
...	267	...	...	...	
32	793	243	...	...	
46	571	104	15·61	...	
9	222	41	...	...	
16	228	220	3·82	...	
30	320	105	...	...	
15	320	125	1·30	25·12	
10	1,318	...	...	...	
10		23	6·71	...	
...		...	...	...	
8	397	78	...	...	
33	333	46	14·45	Nil	
38	524	280	7·24	15·41	
...	409	...	...	...	
...	115	...	...	...	
12	175	58	·99	...	
3	131	9	...	·19	
26	210	117	Statistics not kept.	...	
30	...	171	No records kept.	No records kept.	
34	232	177	11·26	...	
13	319	49	·01	2·77	
...	165	86	...	...	

Subdivision.	Name of Sub-Deputy Collector.	Total number of days in charge.	Total number of days on tour.	Number of mandals or patwaris in circle.
1	2	3	4	5
Gauhati—*concld*	Srijut Kali Ram Medhi, M.A. ...	36	...	...
	Babu Jagat Chandra Das, B.A. ...	92	36	19
	„ Krishna Behari Chaudhuri B.A., B.L.	133	70	...
	Maulvi Muhammad Haniff, B.A. ...	174	46	18
	Srijut Annada Charan Bhattacharyya, M.A.	171	85	26
	Munshi Talmizar Rohman Chaudhuri.	134	35	...
Mangaldai ...	Babu Prabhat Chandra Chatterji, B.A.	365	152	185
	Srijut Gunahash Gosvami (Kalaigaon tahsil).	334	181	19
	Srijut Rama Kanta Barua, B.A. ...	233	81	16
Tezpur ...	Srijut Bhola Nath Das ...	365	157	42
	Babu Guru Charan Chaudhuri, B.L.	90	32	12
	Srijut Rama Kanta Barua, B.A. ...	42	25	...
	„ Betha Ram Sarma (Tezpur tahsil).	317	151	16
Nowgong ...	„ Bharat Chandra Das, B.A....	365	242	94
	„ Kali Ram Medhi, M.A. ...	322	188	74
	„ Gunahas Gosvami (Roha tahsil).	20	11	23
	Babu Sris Kumar Sen (sadr) ...	63	37	...
	„ Krishna Behari Chaudhuri, B.A., B.L.	109	56	No fixed circle.
	Munshi Sufuddin Ahmed, B.A. (Roha tahsil).	223	189	23
Golaghat	Babu Mahendra Kumar Dam, B.A.	365	112	56
Jorhat	Srijut Prabodh Chandra Bardalai, B.A.	365	102	61
	„ Bistu Ram Barua ...	365	225	16
Sibsagar sadr ...	Munshi Faizuddin Ahmed ...	335	212	17
	„ Phukan Ali, B.A. ...	365	164	72
	„ Ikram Russal ...	127	6	...
	Srijut Rama Kanta Barua, B.A. ...	82	39	40
	„ Laksheswar Sarma, B.A. ...	215	107	15
Dibrugarh ...	Babu Jagat Chandra Das, B.A. ...	191	99	80
	Srijut Rukmini Kanta Chakravarti, B.A.	263	132	80
	Maulvi Azimuddin Ahmed, B.A. ...	328	154	80
North Lakhimpur ...	Babu Dwaraka Nath Chaudhuri, B.A.	365	200	33

DIX B—*concluded.*

Number of mandals or patwaris whose papers were checked.	Number of villages in circle.	Number of villages visited.	Total length of check-lines run (linear miles).	Area, in acres, of concealed cultivation discovered.	Remarks.
6	7	8	9	10	11
...	...	...	...	...	
14	143	14	...	...	
...	...	74	·83	...	
...	79	32	...	...	
...	210	35	...	...	
...	...	32	...	...	
74	1,870	110	3·86	4·02	
15	205	205	2·24	...	
16	121	81	0·31	...	
...	322	140	37·03	37·03	
7	124	22	...	...	
10	...	10	5·57	2·71	
12	116	66	...	...	
89	604	291	36·34	135·86	
69	604	237	14·07	14·21	
2	153	...	...	...	
12	...	2	...	...	
41	...	71	1·42	...	
33	153	203	14·50	24·13	
56	367	55	9·12	...	
61	464	127	0·59	...	
...	146	...	...	...	
...	...	...	...	...	
29	639	65	1·81	·66	
...	...	7	...	...	
25	385	36	·21	...	
...	111	53	...	...	
31	822	93	27·46	...	
51	822	264	9·32	...	
42	822	92	21·63	...	
33	260	204	30·41	14·25	

APPENDIX C.

Statement showing the condition of Survey marks on the 30th June 1905.

No.	Classification.	Total number of marks.	Total number found in good order.	Number found not in good order.		Total of columns 4 and 5 in good order on 1st July 1905.	Number lost or left unvisited.
				Repaired.	Not repaired.		
1	2	3	4	5	6	7	8
1	Trijunction prisms ...	14,897	12,655	231	173	12,886	1,329
2	Traverse stations shown by mounds and boughs.	85,863	43,912	16,306	9,795	60,218	10,614
3	Kanungo's mounds, including jungle mounds.	10,737	4,885	1,851	2,275	6,736	1,537
4	Country stones on theodolite stations	24,056	19,777	31	303	19,808	3,945
5	Prisms on boundaries of grants ...	7,385	6,700	43	62	6,743	361
6	Concrete blocks on boundaries of grants	16,298	13,417	109	148	13,526	1,609
7	Country stones on boundaries of grants	19,154	16,546	289	102	16,835	2,139
8	Mounds on boundaries of grants ...	2,689	1,826	113	396	1,939	261
9	Brick pillars on ditto ...	829	747	...	18	747	64
10	Iron posts	13	13	...	...	13	...
11	Brick pillars on town boundaries	14	...	...	...	...	...
	Total	181,935	120,478	18,973	13,272	139,451	21,859

APPENDIX D.

Statement showing the non-cadastral area surveyed and mapped during the year ending the 30th June 1905.

Name of subdivision or district.			Total settled non-cadastral area, in acres.	Area surveyed and mapped, in acres.	Area surveyed and passed as correct, in acres.	Amount of rewards paid or due.
1			2	3	4	5
						Rs. a. p.
Goalpara ...	Dhubri		15,583·47	1,951·17	1,951·17	86 12 0
Kamrup ...	Barpeta		15,760·57	16,677·50	16,677·50	788 4 3
	Gauhati		33,532·64	20,157·92	6,387·85	301 14 3
Darrang ...	Tezpur		43,296·00	8,737·00	8,737·00	322 14 3
	Mangaldai		34,520·63	4,682·43	3,696·48	137 6 9
Nowgong ...	... ...		6,478·51	6,183·80	4,486·28	212 0 9
Lakhimpur ...	Dibrugarh		225,387·00	46,569·00	37,747·20	1,769 0 6 4
	North Lakhimpur ...		28,000·00	12,256·00	7,052·80	330 9 7
Total ...	... ...		402,558·82	117,214·82	86,736·28	3,949 4 2

APPENDIX E.

Current Progress Return of Resettlement for 1904-1905.

District.	Number of villages.				Office work for villages dealt with in the field during the year preceding.			Field work during the year under report.			Assessment.			Expenditure.		Incidence of total expenditure per square mile of area.		
	Total in the district.		Taken up to the end of the year under report.		Number of villages to be dealt with in office.	Number of villages for which		Number of villages for which			Number of villages for which rates have been submitted.							
	Established.	Fluctuating.	Established.	Fluctuating.		Maps faired.	Records faired.	Maps and records corrected.	Land classed.	Maps and records attested.	During the year.	Previously.	Total to end of year.	During the year.	Total to end of year.	For which maps and records corrected.	Attested.	For which revenue rates submitted.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
														Rs.	Rs.			
Kamrup ...	1,325	837	1,277	684	812	701(a)	115(b)	650	1,149	1,149	1,774	187	1,961	48,938	1,23,047	89·03	64·57	33·51
Sibsagar ...	1,384(c)	256(d)	1,384	256(d)	1,384	775	...	256(d)	882(d)	882(d)	603	155	758	51,692	1,33,778(e)	53·70(f)	53·70(f)	166·01

(a) Up to the end of the year under report maps of 1,332 villages have been traced.
(b) This shows only the villages where all the records have been completely faired out.
(c) Excluding 3 towns and 1 Holangapar reserved forest.
(d) Including 27 non-cadastral villages (area of one mandal's circle counted as one village) which have no maps.
(e) Actually cashed up to 30th June 1905.
(f) Including non-cadastral 774·24 square miles which have no maps.

APPENDIX F.

Statement showing the Number of Deaths among Cattle during 1903-1904 *and* 1904-1905.

District.	Rinderpest.		Foot-and-mouth disease.		Anthrax.		Other diseases.		Total.		Estimated value of cattle.	
	1903-1904.	1904-1905.	1903-1904.	1904-1905.	1903-1904.	1904-1905.	1903-1904.	1904-1905.	1903-1904.	1904-1905.	1903-1904.	1904-1905.
1	2		3		4		5		6		7	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Rs.	Rs.
Cachar ...	159	596	401	368	769	242	553	233	1,882	1,439	19,665	18,746
Sylhet ...	3,235*	22,289	1,354	2,254	1,881	4,991	5,773	6,697	12,243	36,231	1,07,808	3,45,370
Goalpara ...	862	2,892	1,620	997	60	956	4,438	2,312	6,980	7,157	45,845	62,242
Kamrup ...	12,385	9,873	1,409	727	1,679	1,588	7,852	3,701	23,325	15,889	2,33,250	1,58,890
Darrang ...	12,764	3,525	2,410	2,381	1,236	1,326	4,563	4,100	20,973	11,332	1,71,726	82,441
Nowgong ...	5,431	4,757	2,637	8,789	1,037	512	...	...	9,105	14,058	91,050	1,40,580
Sibsagar ...	3,588	2,048	1,731	875	1,327	372	5,466	5,591	12,112	8,886	1,10,895	81,189
Lakhimpur ...	786	5,787	106	...	...	...	4,372	4,872	5,264	10,659	1,68,505	3,14,415
Naga Hills ...	(Not available.)											
Khasi and Jaintia Hills ...	310	6	7	...	...	...	...	...	317	6	3,170	60
Garo Hills ...	1,064	646	539	313	397	139	1,483	1,018	3,483	2,116	31,331	28,945
Total ...	40,584	52,419	12,214	16,704	8,386	10,126	34,500	28,524	95,684	107,773	9,83,245	12,32,878

* Last year's figures have been revised.

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REPORT

OF THE

AGRICULTURAL BRANCH

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE

EASTERN BENGAL AND ASSAM

FOR THE YEAR 1905-1906.

SHILLONG:

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2. Expenditure on Miscellaneous Experiments and enquiries made by the Department.

REPORT

OF THE

AGRICULTURAL BRANCH

OF THE

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, EASTERN BENGAL AND ASSAM

FOR

1905-1906.

No. 8683A.

FROM

H. C. BARNES, ESQ., I.C.S.,

Director, Department of Land Records and Agriculture, Eastern Bengal and Assam.

TO

THE CHIEF SECRETARY TO THE GOVERNMENT OF EASTERN BENGAL AND ASSAM, SHILLONG.

Dated Shillong, the 24th October 1906. / 7th November 1906.

SIR,

I HAVE the honour to submit the Annual Report of the Agricultural Branch of this Department for the year 1905-06. The report deals with a period of fifteen months from the 1st April 1905 for Eastern Bengal districts and twelve months from the 1st July 1905 for Assam districts. It has been prepared in accordance with the Government Order No. 3279C., dated the 26th March 1906.

2. This Department has experimental farms at Rajshahi, Rangpur, Jorhat and Shillong. Separate reports have been published regarding the working of these institutions. The information has not been repeated in the report which I now submit.

CHAPTER I.

INTRODUCTORY REMARKS.

3. I was in charge of the Department from the beginning of the year for Assam districts and for the Eastern Bengal districts from the 16th October 1905 to the close of the year. I was on tour for 198 days and inspected the several farms under this Department.

4. The Assistant Director was on privilege leave at the commencement of the year. He rejoined his duties on the 21st July 1905. Mr. Basu was unable to leave Shillong during the rainy season owing to pressing work in the office, except for a short visit he paid to the Tropical Plantation in August. He left for his cold weather tours on the 3rd November, proceeding first to Wahjain and thence to Sylhet to inspect some co-operative credit banks in his capacity as Registrar of Co-operative Credit Societies, and to engage some jute cultivators for Upper Assam. From Sylhet he went to Chittagong and thence to Rajshahi and Rangpur to inspect the Experi-

mental Farms at these places. He went for a day from Rangpur to Dinajpur to make over charge of his office as Registrar of Co-operative Credit Societies to Mr. K. C. De, I.C.S. From Rangpur, he proceeded to Dacca about the middle of December, and on his way paid a short visit to the private farm of Babu Brajendra Kishore Roy Chaudhury at Gauripur in Mymensingh. He spent four days at Dacca searching for suitable sites for the Central Farm. Mr. Basu returned from Dacca for a few days to headquarters to attend to some urgent work at the Experimental Farm and Fruit Garden and left Shillong again on New Year's Day. After spending a few days at Jorhat in selecting a site for the Jorhat Farm, and making preliminary arrangements for starting the farm, he went to Pusa to attend the second meeting of the Board of Agriculture held there during the third week of January. From Pusa he proceeded to Dacca to make arrangements in connection with the survey of the Central Farm. He left Dacca on the 2nd February, and after paying a short visit to the Jorhat Farm reached Shillong on the 7th. Leaving Shillong again on the 14th, he proceeded to Dacca to attend the discussions which took place regarding the opening of the Dacca Farm and the reorganisation of the Department. From Dacca he went again to Jorhat and thence to Rangpur, where he met the Inspector-General of Agriculture and consulted him about matters relating to the Jorhat and Rangpur Farms. He next visited the Rajshahi Farm and thence returned to headquarters in the second week of March. During the latter part of March, Mr. Basu paid a visit to the Tropical Plantation at Wahjain. He left Shillong again on the 6th April for a short tour to Jorhat and Dacca and returned to headquarters on the 29th idem. This completed his cold weather tour. In June Mr. Basu visited Rangpur to select a site for the proposed Tobacco Farm and to inspect the existing farm.

In all the Assistant Director was on tour for 163 days during the year. Besides, he paid 22 visits to the Experimental Farm at Upper Shillong.

Reorganisation of the Agricultural Department.

5. The Agricultural Department is now being reorganised on certain lines which were laid down by Sir Bampfylde Fuller in a memorandum recorded by him in February last. The memorandum was the outcome of a conference held at Dacca presided over by the Lieutenant-Governor, at which the Inspector-General, Mr. F. G. Sly and Dr. H. Mann were present. The recommendations of the Lieutenant-Governor have since the close of the year received the approval of the Government of India. A copy of the memorandum is printed as an appendix to this report.

CHAPTER II.

SCIENTIFIC AND NATIONAL ENQUIRY UNDER IMPERIAL CONTROL.

Economic collection.

6. During the period under report specimens of 23 different plants were sent to the Reporter on Economic Products to the Government of India. Besides, he was supplied with a collection of the indigenous iron manufactures of Assam and a collection of seeds of different varieties of Job's-tears grown in the hill districts of Assam.

Cotton cultivation.

7. Caravonica cotton, the seed of which was supplied by the Inspector-General of Agriculture in India in April 1904 and distributed to a large number of persons in Assam, has shown some better results than in the year 1904-05. Three samples of lint were sent to the Inspector-General of Agriculture, who obtained the following valuations from Bombay trade experts :—

Name of variety and where grown.	Seed whence obtained.	Estimated value on 19th April 1906.	Count of yarn for which suitable.	Basis F. G. F. Egyptian on 19th April 1906.	Remarks.
1	2	3	4	5	6
Caravonica, Nowgong Jail.	Inspector General of Agriculture in India.	Rs. 450—75 per candy of 784 lbs. or Rs. 47 to Rs. 50 per maund.	S S 50 to 60	10d. per lb.	Resembling very much Egyptian cotton both in colour and staple, rather seedy. Staple very long and strong.
Caravonica, Khasi Hills.	Ditto	Ditto ...	S S 50 to 60	Ditto ...	In all respects same as above, except that this sample is cleaner.
Caravonica, Goalpara.	Agri-Horticultural Society of Madras.	Rs. 500—25 or Rs. 54 to 55 per maund.	S S 60 to 80	Ditto ...	Better than the above two samples, both in class and staple, being white in colour and longer in fibre comparatively.

Though in certain places experiments with Caravonica cotton were a failure, yet it has been found that the plant can stand the humid climate of Assam, and it is likely to be successful as a field crop. A fresh distribution of Caravonica cotton seed obtained from last year's plants, including 5 pounds of seed supplied by the Inspector-General of Agriculture, was made to farms and persons interested in cotton cultivation in different parts of the province.

Different varieties of foreign and indigenous cotton distributed by the Bengal Agricultural Department to the members of the Agricultural Association, Government, Wards and private estates in Eastern Bengal did not succeed in any place except in Chittagong where the American variety known as "King's improved" and "Dharwar" gave a fair yield.

CHAPTER III.

SCIENTIFIC AND LOCAL ENQUIRY UNDER PROVINCIAL DIRECTION.

Jute demonstration.

8. With a view to demonstrate to the Assamese and other raiyats, the profitable nature of the jute crop as well as the proper method of cultivating the plant and preparing the fibre, and by this means to extend its cultivation in the Assam Valley, arrangements were made in the beginning of the last cold weather to provide expert Bengali jute cultivators to certain selected persons who evinced an interest in the matter. Four experienced Bengali cultivators were supplied in January last to (1) Mr. Forbes of Badlipar Tea Estate in Golaghat, (2) Rai Bahadur Jagannath Barua of Jorhat, (3) to Srijut Indreswar Sarma, Mauzadar of Silakuti in the district of Sibsagar, and (4) to the Secretary to the Assam Branch Association, Dibrugarh. Jute seed was obtained from Serajganj through Messrs. Macdonald & Co., and supplied at Government expense to the parties mentioned above.

At Badlipar an area of nearly 10 acres of land on the banks of the Gela Beel has been sown with 1 maund 5 seers of seed. Heavy and excessive rain after the sprouting of the seed has destroyed nearly half the plants on the low-lying portion of the area and thus marred the success of the cultivation to some extent. The present condition of the surviving plants is reported to be fair.

The Assam Branch Association, Dibrugarh, got 30 acres of land prepared at Chabua, of which only 7 acres had been planted when the rains set in and continued incessantly through the whole of the sowing season. The crop suffered further from hailstorm and eventually turned out a complete failure.

The mauzadar of Silakuti reports that out of 54 bighas (17·8 acres) of land prepared for cultivation, an area of 44 bighas (14·5 acres) has been sown with 1 maund 32 seers of jute seed; the remaining area, having been inundated, could not be sown. In 16 bighas (5 acres) of land, weeds grew in profusion and overpowered the young crop. The crop was also damaged to some extent from heavy and continuous rain at the sowing season. The greater part of the area cultivated promises to yield a fair outturn.

Rai Jagannath Barua Bahadur, of the Letekujan estate in Jorhat, reports that an area of 27 acres in 3 plots was sown with the help of the jute cultivator provided by Government. The quantity of seed used was 5 maunds, of which 1 maund 5 seers were supplied by Government. The weather was very wet in April and part of May and the sowing was in consequence late. Want of sufficient rain in June and July retarded the growth of the plants. The crop is expected to yield a good outturn on about a third of the experimental area. On another third, a medium yield is expected, and on the remainder the yield will be below the average.

A number of private individuals is reported to have cultivated jute as an experimental crop in the Sibsagar and Lakhimpur districts. But the experiment turned out a failure in every case, owing, it is reported, to the prevalence of unfavourable weather.

Wheat experiments.

9. An account of wheat experiments made in 1904-1905 in Kamrup, Darrang, Sibsagar and Lakhimpur was given in the last Annual Report. Some of these experiments having been attended with a fair amount of success, arrangements were made to repeat them at the same places during the last cold weather. Seed wheat was obtained from Dumraon in Behar, and in all seven maunds were distributed for experiment.

In Jorhat (Sibsagar) out of the eight persons who tried wheat, one obtained a fairly good result, the yield being 1,030 lbs. of grain to the acre, and in two cases a fair outturn was obtained. The other persons failed chiefly through injury caused to the crops by cattle.

In Kamrup only two persons in Hajo took seed for trial. One of them obtained a fair yield (758½ lbs. from an acre). The other was not successful. His failure is attributed to the crop having been sown so late as the middle of December.

The wheat experiments in Darrang were made at and near Tezpur. Nine persons in all took seed. Two of these men obtained a fair yield (816 lbs. and 494 lbs. to the acre). The remaining experiments resulted in failure; the crops in some cases were greatly damaged by birds, stray cattle and elephants, and in others seemingly failed through want of proper cultivation.

In Lakhimpur seed was given out for trial to ten persons, all in the neighbourhood of Dibrugarh. Out of these, four men obtained yields amounting to 710 lbs., 543 lbs., 468 lbs. and 442 lbs. to the acre, respectively. The other men failed. The season was an unfavourable one, there being rain and wind with little or no sunshine at one time. The people were not enthusiastic in the matter of wheat cultivation, and it is doubtful if any good will be served by continuing the experiment any further in the district. Lakhimpur is the dampest district in the valley and is not likely to suit wheat well.

The quality of some of the samples of wheat grown in Darrang appeared to be very satisfactory, and some of the Jorhat and Kamrup samples were fairly good. In several cases, the grain appeared shrivelled and of a dull colour, though the field was a fair one.

The experimenters were given to understand that those who would be successful would be given prizes according to the quantity of grain they obtained. Thirteen prizes aggregating to Rs. 139 were accordingly awarded at the close of the season.

Arrangements are being made to have further experiments in wheat conducted in Darrang, Sibsagar and Kamrup during the ensuing cold season.

Experiment in tea-growing at Shillong.

10. In the beginning of 1905 an experiment was undertaken with a view to determine whether the Khasi Hills are suited for tea-growing. It was conducted under the supervision of Mr. E. P. R. Gilman. A small established plantation attached to the house known as Mr. Rosenrode's at Upper Shillong was leased by him for the purpose and worked experimentally on behalf of Government, the necessary expenses being provided by Government. The plantation contains an area of ¾ of an acre and has about 1,500 plants, 900 China plants and 600 good Hybrid. The bushes were full of lichen and their wood very knotty and white, which when cut seemed very sapless compared with wood in the plains. They were pruned in a medium way, clearing as much of knots as possible and the ground was forked with pronged forks instead of hoeing with ordinary spades, in order to save the roots, which were mostly on the surface. The bushes did not respond to the cultivation at all in the first year, the yield of tea being very poor —only 26lbs. Better results have been obtained in the second year, when up to 11th May the outturn amounted to 66lbs. The tea was favourably reported on, and was valued in the commencement of the season at Re. 1-8 per lb. and at the end of the season at Rs. 2-8 per lb.

In addition to this experiment, and apart from it, a small tea nursery was laid out by Mr. Gilman near the Upper Shillong Farm, with the ultimate object of the development of a tea garden. Eight maunds of tea seed were obtained from the Lushai Hills. Of this only about 25 per cent. arrived here in good condition. It was sown in the nurseries in February 1905. The seed germinated well, but it had at no time as vigorous a growth as in the plains. The frost seems to have affected the nurseries although very few plants actually died. A new lot of seed was obtained this year from Darjeeling and Assam. In all 4½ maunds of tea seed have been sown.

Mr. Gilman expresses the opinion that if tea was planted out a little lower down, where it could be more sheltered, there is no reason why it should not grow and come on as well as it does at Travancore and give the same yield as it does there some four maunds per acre. At Travancore, although the yield at an elevation of 6,000 feet has been as high as 6 maunds per acre, it has never been able to get the flavour which the Shillong teas have.

The experiments have since been discontinued.

Natal oranges.

11. The orange plants imported from Natal in 1902 and distributed for trial to the several persons mentioned in the report for 1903-1904 have not much growth at Shella in the Khasi Hills and at Bamgaon in the Darrang district. At the Tropical Plantation at Wahjain, the plants have

made exceedingly good growth, but have not come into bearing yet. At Tezpur one out of the two plants given to Babu Syama Charan Maitra has grown to a height of 7 feet and commenced to bear, but the fruits are still green and nothing can be said about their quality as yet. The remaining plant which was planted at Kaligaon near Sootia died from excessive rain and flood.

AGRICULTURAL EXPERIMENTS IN GOVERNMENT, WARDS, AND PRIVATE ESTATES, ETC.

Rajshahi Division.

12. Experimental cultivation of Ambala, Nainital and local potatoes, jute, Buxar and Muzaffarnagar wheat, paddy and English vegetables were undertaken in several wards' estates in the division. They were generally successful. The experiments with oats, barley, potatoes and Samsara sugarcane and wheat are reported to have failed in Rajshahi and Malda Government estates. In the Alipur Government estate in Jalpaiguri 15 maunds of Nainital potato were distributed to the raiyats, and its cultivation proved successful. The Samsara cane is gradually spreading in the Bogra district, and there is a growing demand for it. Patna potato is said to have become the staple crop of the Jaipur Government estate in Bogra.

During the period under report, sugarcane, varieties of paddy, potato and Jamaica ginger were tried by the members of the Bogra Agricultural Association, and except the last named crop the others gave satisfactory results. The experiments are reported to have been watched with interest by cultivators. The experiments made by the members of the Malda Agricultural Association with the Japanese Kiushiu paddy failed. No agricultural experiments were undertaken by the Rajshahi Agricultural Association. No report has been received on the working of the Rangpur Agricultural Association.

Dacca Division.

13. Very little was done in the way of agricultural experiments in the Government and wards' estates in the division. Potatoes were tried in some of the Government estates in Bakarganj, Faridpur, and Mymensingh, but the outturn was poor everywhere. Experiments were made with Bombay and Samsara sugarcane, *Patal* and radishes in Faridpur, and with wheat in Mymensingh, but no encouraging results were obtained. No agricultural experiments were undertaken in the wards' estates in the division.

A private farm has been in existence at Gauripur since 1901. It is maintained by Babu Brajendra Kishore Roy Chaudhury, zamindar. The farm was under the supervision of the Bengal Agricultural Department till the partition of Bengal. But since then it has received very little attention from this Department. The area is 50 acres, of which about 22 acres are under cultivation. The most important crops grown on the farm are jute, sugarcane, paddy and potatoes. The total receipts amounted to Rs. 1,290 during the period under report, and the total expenditure to Rs. 3,875. The net cost of maintaining the farm therefore came to Rs. 2,585.

Several varieties of jute were sown but the crop in most of the plots suffered so much from fungus disease and insect pests that no results of value were obtained.

In the manuring experiments in paddy a mixture of cowdung and superphosphate gave a higher outturn of grain than any other fertilisers used.

Excepting *Khari* sugarcane, all other varieties experimented with failed. The potato experiments also failed through the ravages of insects.

The crops now on the ground have been sown in accordance with a programme of cultivation prepared by my Assistant Director some months in advance. The prospects of most of the crops are reported to be bad.

Chittagong Division.

14. In the several wards' estates in Chittagong and Noakhali the cultivation of potatoes, sugarcane, varieties of paddy, jute, country and English vegetables were tried on a small scale. Of these only Central Provinces fine *aus* paddy in Noakhali and English vegetables in Chittagong proved successful. Experiments made with potatoes, gram and peas in the Noakhali Government estates failed to give satisfactory yields.

Agricultural implements.

15. No implements of novelty or importance were tried in the province during the year. A few Sibpur ploughs and Hindustan ploughs were tested in certain wards' estates in Rajshahi and gained popular favour. The Behia cane-mill was tried in the Chittagong wards' estates, but the manager reports that the cultivators prefer wooden mill to it, as being less expensive and easily procurable.

16. In no part of the province did locusts appear during the period under report. But insects have caused considerable damage to crops especially to paddy in Eastern Bengal. Two pests locally known as *Urchong* and *Kochori* or *Beri* attacked the jute plants in Bogra. Specimens of these insects were sent to the entomologist, who identified the former as a large cricket common in many parts in India, and the latter as caterpillar of a moth known as "*Caradrina ingna.*" In Noakhali *Leda* and *Katagundi* caused some injury to paddy crops, and the insects locally called *Seni*, *Chuua*, *Leda* and *Yang* did considerable damage to crops in Chittagong and the Chittagong Hill Tracts. A species of caterpillar not as yet identified damaged the rice crop in the districts of Mymensingh, Dacca, Tippera, Kamrup and Sylhet. A serious rice pest known as *Pamari Poka* broke out in Bakarganj. The Imperial Entomologist paid a visit to Barisal. He found the insect to be no other than the well-known rice pest known to science as *Hispa Anaescens*. Mr. Lefroy has suggested as a remedy the sweeping of the affected fields with cloth bags. But the remedy is one which is not easy of application, and so far it has not been tried.

Locusts and other insect pests.

17. The results of the crop-cutting experiments carried out in the districts of Eastern Bengal during the year 1905-1906 will be fully analysed and discussed when submitting the quinquennial report due to Government in the year 1907.

Crop-cutting experiments by District Officers and Settlement Officers.

CHAPTER IV.

AGRICULTURE AND INDUSTRIAL EDUCATION.

18. At the time of the partition, arrangements were in existence under which the Superintendents of the Experimental Farms at Rangpur, Rajshahi and Chittagong gave agricultural instructions to boys of the local schools, and were each given an allowance of Rs. 25 per mensem for the extra work. The allowances were paid out of the funds of the Education Department. This Department has had no direct concern with the Experimental Farm at Chittagong, and it is not known whether the Superintendent of the Farm still continues to teach agriculture at the local high school. The agricultural class at Rajshahi was continued till May last, when it was abolished under the orders of Government. The class did not appear to serve any particular purpose. The agricultural class at Rangpur consists of a few pupils who are sons of cultivators and who receive instruction from the Superintendent in the method of cultivating tobacco and in the making of cigars. They receive each a stipend of Rs. 4 per mensem from the District Board. It is reported that the boys take no practical interest in the work. The class is being still continued, though the Superintendent has ceased since May to draw any special allowance for teaching the boys.

Agricultural Instruction.

19. This institution continued to have three separate branches during the year, namely, sericultural, weaving and technical. Apart from the grants received from other sources, a contribution of Rs. 500 was made in aid of the sericultural branch from the funds of the Agricultural Department. The subjects of study in this branch are at present limited to the theory and practice of silkworm culture, and the course extends over six months, thus giving two sessions in a year, commencing from January and July respectively. Two sets of pupils passed during the year, three in July and four in January. It has been decided to remodel the sericultural branch on a more popular basis and to make it a provincial institution.

Rajshahi Diamond Jubilee Industrial School.

Students of the sericultural as well as those of the amin classes attended theoretical instructions on agriculture at the Rajshahi Farm. But this teaching was found useless, not being associated with any practical work, and was accordingly discontinued since May last.

20. Two students—an Assamese and a native of the Khasi Hills—were sent to the Pusa Agricultural College in 1905 at Government expense for training in general farming. The latter, who was formerly in charge of the Upper Shillong Agricultural station and Fruit Garden, has come back after going through a course of practical training for

Deputation of students to Pusa and Chinsura.

nearly nine months. He has been appointed Superintendent of the Khasi Hills Experimental stations. Another Khasia has been sent to Pusa since the close of the year for a course of entomological training.

During the period under report, six students—four from Sylhet and two from the Khasi Hills, were sent to Chinsura for learning the use of the fly-shuttle loom invented by Messrs. P. N. De & Co. Each student was granted a scholarship of Rs. 15 per month and travelling expenses both ways. They have since returned after having gone through a full course of training.

CHAPTER V.

PUBLICATION OF AGRICULTURAL INFORMATION, ETC.

21. The usual preliminary and final forecasts on the various staple crops of the province and the season and crop report for 1905-1906 were published during the period under report. A bulletin on the cultivation of squash was issued by the Department and a note on the orange cultivation in the Khasi Hills, drawn up by Rai B. C. Basu, Bahadur, Assistant Director of Agriculture. was contributed to the Agricultural Journal of India and printed copies thereof were distributed in the province.

CHAPTER VI.

MISCELLANEOUS.

Introduction of English pigs.

22. Mention was made in the last annual report of eight English pigs having been supplied from the herd at the Upper Shillong Experimental Farm to the Deputy Commissioner, Naga Hills, and four to the Deputy Commissioner, Garo Hills, for breeding purposes. Those sent to the Naga Hills failed to breed, and were sold off during the year. The two pairs supplied to the Deputy Commissioner, Garo Hills, were sold to two Garos, who took them for breeding purposes, one of them—a sow—died and nothing is known of the others. Of the four pigs supplied to a planter in the Assam Valley in 1904, one, a boar, died, and it is not known what has become of the others. Three pigs were supplied to a planter in the Darrang district in May last for breeding purposes.

Demonstration of the fly-shuttle loom.

23. With a view to demonstrate the use of the improved fly-shuttle loom in the Khasi Hills, a trained weaver, with a loom invented by Messrs. P. N. De & Co., of Chinsura in Bengal, was obtained in May last. The use of the loom was demonstrated at the Flower Show held at Shillong on the 24th May 1906. An unexpected demand for instruction in the use of the loom having arisen, the weaver was kept employed at Shillong for two months. A large number of candidates, both Khasias and Bengalis, attended the demonstration. Since the close of the year arrangements have been made to demonstrate the use of the loom at Sylhet and at Kalain in Cachar.

A weaving institution has been established at Sylhet by private enterprise. A grant-in-aid of Rs. 10 per month has been sanctioned for this institution experimentally for one year.

Agricultural shows.

24. Agricultural Shows were held during the year at Malda, Faridpur, Jalpaiguri, Rangpur, Bogra and Silchar, to each of which a contribution of Rs. 150, 200, 500, 200, 100 and 1,150, respectively, were made by Government. At the Rangpur Exhibition the Superintendent of the Rangpur Farm exhibited some improved agricultural implements, the remainders were not attended by any officers of the Department. The Bogra Exhibition has been reported to be more successful than that of the last year. The Alipur and Falakata fairs at Jalpaiguri are kept up mainly for political reasons, with a view to encourage trade between Bhutan and the plains. Two Agricultural exhibitions were held in connection with these fairs, which were attended with fair success. There is nothing particular to note regarding agricultural features of any of the other shows.

Flower Show.

25. The first Flower Show was held at Shillong in June 1904. During the period under report, two more shows were held, one on the 27th September 1905 and the other on the 24th May 1906. The exhibition of September 1905, which was the second annual show held at Shillong, did not prove quite so successful as the first show held in June of the previous year. It was too late for a good display of flowers, and the season having proved unfavourable, there were fewer entries of vegetables of other agricultural produce than at the preceding show. The total number of exhibits was 491. Fifty-seven money prizes, aggregating to Rs. 173, were awarded, besides a gold medal given by the Hon'ble Mr. (now Sir) J. B. Fuller for the best pair of cattle bred by a Khasia. The total expenditure on the show amounted to Rs. 749, exclusive of the value of certain prizes awarded by private individuals.

The third annual show held in May 1906 attracted a much larger number of exhibits, the total number of entries having amounted to 775, against 491 entered at the second annual show. The entries of vegetables were particularly numerous. In all, 87 prizes, including a gold medal awarded by His Honour the Lieutenant-Governor as in the previous year for the best pair of home-bred cattle, were awarded. The total expenditure of the show amounted to Rs. 1,083, of which Rs. 871 was incurred within the 30th June 1906.

Agricultural Associations.

26. At present there are two Divisional Agricultural Associations, at Chittagong and Rajshahi and three District Associations at Rangpur, Malda and Bogra. The Department possesses little or no information regarding the work done by the Associations during the year.

Museum.

27. There is no Agricultural or Economic Museum in the province.

Cost of miscellaneous experiments and enquiries.

28. The details of the expenditure will be found in Appendix II.

I have the honour to be,

SIR,

Your most obedient Servant,

H. C. BARNES,

Director, Department of Land Records and Agriculture,
Eastern Bengal and Assam.

APPENDIX I.

Memorandum by His Honour the Lieutenant-Governor

On the Programme of the Agricultural Department of Eastern Bengal and Assam, as settled in Conference with the Inspector General of Agriculture on the 16th February 1906.

Dacca Experimental Station.—This will be situated on the site selected by the Provincial Agricultural Department and approved by the Inspector-General east of the Mirpur road, and between it and the Mymensingh road about 2½ miles beyond the race course. It should comprise an area of about 350 acres, of which 100 should be carefully selected as suitable for experimental purposes, mainly in dealing with jute, sugarcane, and rice. Jute will be the principal staple to be experimented with. A good deal of grazing land will be included, and, in addition to the farm cattle, a herd of 20 milch cows may be kept. This arrangement will afford scope for the demonstration of improvements in dairy management and will contribute to the farm manure supply. But dairy farming is to occupy quite a subsidiary position to agricultural experiment.

2. For the present, no educational institution will be associated with the farm. But a class of practical field-men will be trained by the Superintendent. The course should last over two years, during which the apprentices may receive stipends of Rs. 15 a month. When qualified, they will be employed as field-men demonstrators on a salary of Rs. 25—1-8—40. Candidates should be selected with sole reference to practical capacity, and no higher educational qualifications should be looked for than ability to read and write Bengali and to cope with simple arithmetic. There should be no hesitation in rejecting any who during the period of apprenticeship show themselves to be unsuitable. To begin with, it will probably suffice to admit five apprentices annually.

3. The farm steading will be constructed in general accord with the plan which has been drawn up by the Inspector-General, and, as recommended by him, the material used will mainly be corrugated iron. The Superintendent's quarters should be near the steading, apart from the residences which are referred to later on. The large tank on the farm land should be deepened and will then be an ample source of water-supply.

4. The farm will be under the direction of the Assistant Director, and will be in immediate charge of a Superintendent of the grade of Agricultural Supervisor on a salary of Rs. 250—15—400. He will receive in addition to his pay a bonus upon each field-man *successfully* trained by him. He will be assisted by two agricultural overseers on Rs. 30—2—50. He will be given a clerk on field-man's pay (Rs. 25—1-8—40) and a peon on Rs. 8.

5. We may certainly assume that the annual net loss on the farm, apart from the salaries of the staff mentioned above, will be within Rs. 12,000. When once equipped with buildings and cattle, its annual cost will be—

	Rs.
Salary of Superintendent	4,200
„ „ Overseers	960
„ „ clerk and peon	486
Stipends of apprentices	3,000
Annual loss on farming	12,000
Total	20,646

6. *Expert staff.*—Apart from the Assistant Director, the staff of experts will include, to begin with, an expert on fibres (Mr. Finlow), an Economic Botanist (who should have special acquaintance with plant breeding), and an Agricultural Chemist. To these may be added the Superintendent of the Veterinary Department. These gentlemen will be provided with laboratories and residences at the experimental station on a plot of land laid out as agreed upon at the Conference. The residences will be bungalows of the Assam type standing on 8′ brick *changs*. Including outhouses, they

should not cost more than Rs. 12,000 each. The four laboratories will be combined in a masonry double-storied building, arranged according to the plan which has been supplied, very kindly, by Dr. Mann. The building should cost between Rs. 25,000 and Rs. 30,000. The approximate cost of the laboratory fittings will be —

	Rs.
Chemical laboratory...	8,000
Fibre „	8,000
Botanical „	6,000
Veterinary „	6,000
Gas installation	3,000
Total	31,000

For the laboratory water-supply a cistern 40 feet above ground level will be needed. It will be filled from a well by hand pumping.

7. Each expert will have the following staff and contingent allowances :—

Staff.

Fibre expert—	
1 Laboratory Assistant on	Rs. 100—5—150
2 Field-men on ...	Rs. 25—1-8—40
1 Clerk on ...	Rs. 30—2—40
2 Laboratory servants on	Rs. 15
2 Peons on ...	„ 8
Average per mensem ...	„ 287
Agricultural Chemist—	
1 Laboratory Assistant on	Rs. 100—5—150
1 „ „ on	Rs. 75—2-8—100
1 Clerk on ...	Rs. 30—2—40
2 Laboratory servants on	... Rs. 15
2 Peons on	... „ 8
Average per mensem ...	„ 308
Economic Botanist—	
1 Laboratory Assistant on	Rs. 100—5—150
4 Field-men on ...	Rs. 25—1-8—40
1 Clerk on	Rs. 30—2—40
2 Preparers on ...	Rs. 20
2 Peons on... ...	„ 8
Average per mensem	„ 367

Contingent allowances.

	Rs.
Travelling allowance of officer ...	2,000
Ditto of staff ...	700
Supplies and services ...	1,500
Books	500
Miscellaneous	1,000
Total	5,700
Travelling allowance of officer ...	1,500
Ditto of staff ...	500
Supplies and services ...	1,500
Books	500
Miscellaneous	1,000
Total	5,000
Travelling allowance of officer ...	1,500
Ditto of staff ...	500
Supplies and services ...	1,000
Books	500
Miscellaneous	1,000
Total	4,500

8. The Assistant Director will reside at the experimental station with the other experts, and will be provided with a residence on the scale adopted in their case. His office will be in the Secretariat building, forming of course part of the Director's. He should be given the services of an Entomological Collector on Rs. 30—2—50, who

should be trained by Mr. Lefroy. He will have under his orders an officer of the grade of Farm Superintendent on Rs. 100—10—200, who will be available to fill leave vacancies amongst the Farm Superintendents, and, when not so employed, will be deputed to special local investigations.

9. *Other Experimental Farms.*—Farms for experimental purposes will be maintained at Rajshahi Rangpur, and Jorhat, but on a very much smaller scale. The main staples to be experimented with should be, respectively, potatoes, tobacco and sugarcane. Each of these farms will be in charge of a Superintendent on Rs. 100—10—200, with a clerk on Rs. 25—1-8—40, and a peon on Rs. 8. Apart from the salaries of this staff, the annual loss on each farm should not exceed Rs. 3,000, and its annual cost will, therefore, be within Rs. 5,500.

10. The fruit, spice, and sericulture gardens in the Khasi Hills will be maintained as at present, being in charge of a Khasi Superintendent, whose pay will be regulated by his attainments and capacity.

11. *The demonstration of improvements.*—The programme must provide for the systematic demonstration to the public of improvements which have been shown by actual experiments to be suitable to the locality. Government estates and estates under the Court of Wards will afford a useful field for these demonstrations. But there are still greater possibilities in enlisting the agency of private individuals, who are willing to co-operate with the department. Such individuals, who might be styled Associates of the Agricultural Department, should be selected by the Director, in communication with the Collector, on the ground of *practical* interest in agriculture: each of them should be bound to carry out at least one practical demonstration each year: he would be supplied free of cost with the particular novelty (seed, manure or implement), the virtues of which are to be displayed: he will be assisted, where necessary, by the loan of the services of a trained field-man: his farm would be periodically inspected by the Director, the Assistant Director, or an Agricultural Supervisor: he should be encouraged to correspond with the Director, who should have a Vernacular office to deal with the letters of gentlemen who prefer to correspond in their own language. The management of this correspondence will be a most important item in the functions of the Agricultural Department. The Associates of each district should meet twice a year, with the Collector as President in the Chair. The meeting should be invariably attended by the Director, the Assistant Director, or an Agricultural Supervisor. A definite programme should be settled of the demonstrations to be made in each district. This programme should not be altered except at one of the biennial meetings.

It will be desirable to develop this scheme gradually, one reason amongst others being that until the Director can be provided with a second expert Assistant, it will be impossible to give adequate advice and supervision over all the districts of the province. It will probably suffice, to begin with, if Associates are appointed in eight districts.

It is believed that an agency developed on these lines will be more useful for the proselytising of the country than District Associations as constituted in the past. But where such Associations have been actually established, it should be no part of the scheme to discourage them; and the Agricultural Department should do what it can to assist their efforts and to turn them to practical purposes.

12. A staff of field-men on Rs. 25—1-8—40 will be needed for the making of demonstrations on Government and Court of Wards' estates, and for the assistance of Associates who need help in their demonstrations. It should be remembered that a demonstration trial which is carried out by inexperienced or incapable hands is worse than useless. A trained field-man should be deputed for the making of every demonstration, whether on a Government or Court of Wards' estate, or on the land of an Associate, which needs special experience or knowledge, and great care should be taken to ensure that no field-man is deputed to a task which he has not learnt thoroughly himself. For the general guidance of the Associates, the control of demonstrations undertaken on Government or Court of Wards' estates, the inspection of the smaller experimental farms, and the making of special investigations into the agriculture of the country, the Department should include two Agricultural Supervisors on Rs. 250—15—400.

13. If our Associate coadjutors (as is hoped) gradually rise in numbers till they form a large agency, extending over all districts of the province, it will be absolutely necessary to secure the services of a second Assistant Director. An Indian will be more suitable for this office than a European. He might conveniently be selected from the ranks of Sub-Deputy Collectors or Deputy Collectors in permanent employ, and be trained for his special duties by undergoing a course of instruction in the science

and practice of agriculture. If, as is possible, the officer selected has already passed through the Agricultural School at Sibpur, a two-years' course at the Pusa College may suffice to complete his training.

14. *Seed distribution.*—The question of seed distribution is of great importance. Seed which is distributed from the farms will be sent out on the responsibility of the Farm Superintendent. The distribution of seed which is not farm produce and which is sent from one locality to another will be managed by the Director's headquarters office. If the business attains large dimensions, the Director may need a special peripatetic staff of sorters and packers.

15. *Village schools.*—It seems probable that the adoption by the people of agricultural improvements depends very greatly upon our bringing home to the cultivators through the village schools that the operations of farming are connected with simple scientific facts and are capable of being varied with advantage so long as those facts are carefully regarded. If, as is hoped, arrangements are made to give village schoolmasters a course of simple laboratory training, illustrative of the lessons they have to teach, the direction and inspection of this training should be an important function of the Agricultural Department.

16. *Co-operative credit and takavi.*—It may generally be stated that agricultural improvement in this country is impeded by the lack of agricultural capital, and the extension of village co-operative credit is then a subject which is connected very intimately indeed with efforts that are directed to the development of agriculture. The Registrar of Co-operative Credit Societies has been placed upon a footing independent of that of the Director of Agriculture. But the two officers should work in close communication, and should not hesitate to assist one another with suggestions. It will further be one of the functions of the Director of Agriculture to indicate localities in which the grant of *takavi* loans is desirable in the interests of the cultivators.

17. *Gradation of service.*—Apart from the Director, the Assistant Director, and the European experts, the skilled staff of the Department will include—

* Three Agricultural Supervisors on	Rs. 250—15—400
† Four Farm Superintendents „	„ 100—10—200
Three Laboratory Assistants „	„ 100—5—150
One ditto Assistant „	„ 75—2-8—100
One Superintendent for the Khasi Hills gardens on ...	„ 60
Two Farm Overseers (for Dacca) on	„ 30— 2—50
One Entomological Collector „	„ 30—2—50
Field-men (say 12 to begin with)	„ 25—1-8—40
Total cost per mensem	Rs. 1,975 rising to Rs. 3,240

* One will be the Superintendent of the Dacca Experimental Farm.

† Three for Rajshahi, Rangpur, and Jorhat and one in reserve.

The Agricultural Supervisors and Farm Superintendents should have been through a three years' course at a Provincial Agricultural College, to which should be added, in the case of the former, a course of special training at the Pusa College. It is desirable that the Overseers should be given some practical training at the Pusa Farm. After the initial appointments, these posts should be filled by promoted field-men. For the training of field-men we must look to the Dacca Farm, though at the commencement at all events, we shall no doubt be able to obtain some assistance in this matter from Pusa.

18. The annual cost of these proposals, exclusive of veterinary charges, capital outlay, and expenditure now incurred by the Department may be roughly estimated as follows :—

	Rs.	Rs.
European experts—		
Salaries	18,000 rising to	36,000
Staff (average)	11,544	
Contingent expenditure	15,200	
Other skilled staff—		
As detailed above	11,880 „ „	19,080
Dacca Experimental Station	20,646	
Three smaller experimental farms	16,500	
Total	93,770 „ „	1,18,970

APPENDIX II.

Expenditure on miscellaneous experiments and enquiries made by the Department from 1st April 1905 to 30th June 1906.

	Rs.	as.	p.
(1) Cost of seeds distributed	49	0	7
(2) Jute demonstration	636	7	6
(3) Tea experiment	3,157	4	0
(4) Wheat experiment	105	0	0
(5) Pay and travelling allowance of Agricultural Overseers ...	1,379	6	4
(6) Miscellaneous, including Rs. 160 and Rs. 48-13-3 for scholarships to students sent to Chinsura and Pusa respectively ...	208	13	3
(7) Contributions to Agricultural and Horticultural Exhibitions ...	3,920	5	9
Total	9,456	5	5

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Resolution on the Report of the Agricultural Department Eastern Bengal and Assam.

Extract from the Proceedings of the Lieutenant-Governor of Eastern Bengal and Assam, in the Revenue Department, No. 219C., dated Shillong, the 30th January 1907.

Read—

Letter No. 8683A., dated the 7th November 1906, from the Director, Department of Land Records and Agriculture, Eastern Bengal and Assam, submitting his annual report on the Agricultural Branch of his Department for the year ending June 30th, 1906.

RESOLUTION.

THIS is the first report of the Agricultural Department for the new Province. It covers the period from April 1st, 1905, to June 30th, 1906, in the case of the districts transferred from Bengal, and the year from July 1st, 1905, to June 30th, 1906, for the districts of Assam. As the transferred districts were under the Government of Bengal up to October 16th, 1905, however, and the general work of the Agricultural Department in Bengal during that period was not under the supervision and control of this Government, the report is mainly concerned with the work done in Assam and gives but little information concerning Eastern Bengal.

2. The year was devoted by the Department to a great extent to organisation and preparation, and the memorandum recorded by Sir Bampfylde Fuller of the results of a conference held by him in Dacca on February 16th, 1906, at which the Inspector General of Agriculture was present, and which is published as an Appendix to the report, gives an indication of the lines upon which the work of the Department will probably expand in the near future. Some advance has already been made, with the approval of the Government of India, to carry out the proposals set forth in the memorandum, and a separate Director of Agriculture will shortly be appointed to superintend the increasing work of the Department.

3. The operations in the agricultural stations in the Province have been dealt with, in accordance with existing orders, in separate reports which have already been published, but the Director refers briefly in his present report to various experiments that were made during the past year in the cultivation of new crops, or for the improvement of old ones, in addition to those undertaken on the agricultural stations. The important subject of the extension of the cultivation of jute to the districts of the Assam Valley is receiving considerable attention, and Mr. R. S. Finlow, the fibre expert employed by this Government, is engaged upon some experiments in connection with it, while in the meantime good jute seed is being widely distributed, and several enterprising zamindars have obtained the services of Bengali cultivators of the crop to assist their tenants in its production. Although these experiments were not very successful in the past year, the cultivation of the crop is spreading, and should soon be established, in the large areas which are undoubtedly well suited to it in these districts. The Lieutenant-Governor thinks that much assistance could be given towards the popularisation of this crop were the Department able to enlist the sympathy and interest of the missionaries at Gauhati and elsewhere in its work in this direction.

4. It is hoped that the experiments made with caravonica and other cottons during the year will be considerably extended in the near future, and that some other species may be included in their scope. Spence's tree cotton, which appears to have met with success in other parts of India, might with advantage receive a trial. The Lieutenant-Governor would also suggest that some wheat experiments should be initiated in the high and comparatively dry plateau in the neighbourhood of Lumding, and that attention should be turned to the grafting of oranges in connection with the experiments that are being made with that fruit in the tropical garden at Wahjain.

5. While the Director refers to the training of six students in the use of the fly shuttle loom at Chinsura, and to the demonstration of the working of a loom of this kind at Shillong, he has not stated how the students have utilised their training since they returned home, or what practical results seem likely to accrue from the interest shown in the Shillong demonstrations. Mr. Hare will be glad if

the question of employing the students to spread and teach the use of the fly shuttle loom—should that loom be deemed the best or sufficiently good—can be further considered. It is possible also that further practical help could be afforded to weavers who are willing to adopt it, by granting them loans to enable them to purchase such looms, or by providing them with looms on suitable terms.

6. The Lieutenant-Governor hopes that constant attention will be devoted to the study of the insects that have done so much damage of recent years to the rice crops in East Bengal. The remedy that has already been suggested by Mr. Lefroy should be carefully tried by the Department and the results reported, and no pains should be spared to ascertain by actual experiment what can be done to mitigate the evils caused by these pests.

7. While the report reviewed above scarcely does justice to the interesting and varied operations of the Agricultural Department during the period which it covers, the Lieutenant-Governor is indebted to Mr. Barnes for much energetic and careful work, and desires to acknowledge the efficient assistance rendered to him by Rai Bhupal Chandra Basu Bahadur, whose services as Assistant Director have already earned the special thanks of Government on more than one occasion.

By order of the Lieutenant-Governor,

P. C. LYON,

Chief Secretary to the Government of Eastern Bengal and Assam.

MEMO. No. C.

Shillong, the 1907.

COPY forwarded to the Director, Department of Land Records and Agriculture, Eastern Bengal and Assam, for information and favour of necessary action.

By order of the Lieutenant-Governor,

C. TINDALL,

Under-Secretary to the Government of Eastern Bengal and Assam.

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